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Obstetrics

The Physiology of Reproduction The Endocrine Glands and Their Secretions

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Gynaecology.

Section "A" No. 2

Progesterone

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History of Progesterone

It was Prenandt in 1898 who first called attention to the glandular appearance of the corpus luteum. This led him to believe that it was an endocrine gland.

In 1902 Fraentel established that in rabbits nidation of the ovum could not occur if the corpus luteum were destroyed.

Bouin, in 1906, first noted the endometrial changes with the development of the corpus luteum.

In 1913, Fellner and Herrman in Germany produced the same endometrial changes in experimental animals by administration of the extract. Corner in 1928 showed the importance of corpus luteum hormone in maintaining pregnancy in the rabbit following bilateral removal of the ovaries. From 1930-1932 Hisaw, Fevold, Allen, Fels and Slotta produced individually a crystalline corpus luteum hormone, although they elucidated little regarding its physical and chemical properties.

In 1934 Butenardt prepared the first pure progesterone crystals and recognized its ketone properties. In the same year Slotta established the now generally accepted formula of progesterone.

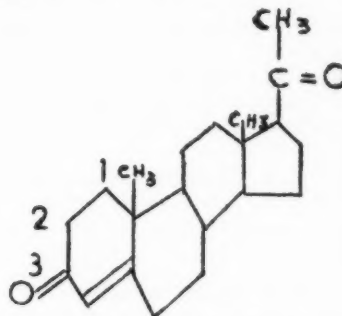
Pregnandiol was first prepared from human pregnancy urine by Marrian in 1929. In 1937 Venning and Browne found that this was actually eliminated as sodium pregnandiol glucuronide. In 1938 they showed that injected progesterone is eliminated as this substance and therefore, this substance is an important end-product of the metabolism of progesterone.

Metabolism of Progesterone

Progesterone is a member of the luteoid group of steroids having the formula:

It is characterized by an unsaturated ketone group of C_3 . Any deviation from this tends to decrease its activity. It is found in the corpus luteum and not in any other part of the ovary.

Indirect evidence shows that the placenta can also produce progesterone and it also has been isolated from the adrenal cortex. These are so far the only areas where there is confirmed progesterone formation.



There are two schools of thought regarding its formation and briefly these are:

(a) Synthesis from smaller molecules possibly carbohydrates.

(b) Formed from cholesterol by degradation of the side chains.

Of the progesterone thus formed, it is estimated that 20-55% is eliminated in the urine as sodium pregnandiol glucuronide and other similar substances. The remainder is inactivated either by oxidative degradation of the nucleus or by reduction. Recent experiments showing the presence of progesterone-like substances in the bile of pregnant cows strongly suggested that this inactivation occurs in the liver. These processes appear to depend on enzymes.

The excretion of pregnandiol in the urine is used as a measure of progesterone formation and, therefore, a degree of corpus luteum function. This, however, assumes (1) Normal uterine endometrium, (2) Normal liver function, (3) Normal kidney function. Hamblen found this method unreliable as an index of ovarian function in the non-gestational cycle or for the diagnosis of ovulation. His experiments showed that 40% of patients bleeding from a progestational endometrium excreted no pregnandiol and 60% of patients bleeding from an oestrogen endometrium did excrete pregnandiol.

In pregnancy there is a consistent steady rise in urine pregnandiol.

Physiological Activity of Progesterone

Progesterone is formed mainly by the transformed granulosa cells in the corpus luteum and

to a much lesser extent by the transformed theca cells.

Excretion of pregnandiol in the urine and hence formation of progesterone in the corpus luteum begins in 1 to 2 days after ovulation, reaches its maximum one week prior to the onset of bleeding and disappears from the urine almost completely 2 to 3 days before menstruation. These findings conform closely to the histological changes in the corpus luteum. Involution begins a few days prior to bleeding and is carried on rapidly such that within 14 days it is only a few millimeters in size. Maintenance depends upon the luteinizing hormone of the anterior pituitary which converts granulosa cells to lutein cells. This action is reciprocal in that large amounts of ovarian hormones tend to inhibit formation of gonadotropic hormones.

There is no evidence of any nervous control of ovarian hormones.

The effects of progesterone may be divided into genital effects and extra-genital effects.

A. Extra-Genital Effects

1. General Effects—Progesterone is not known to produce any general effects in the human. Even in largest doses it does not cause any toxic phenomena. In rats it is capable of producing anaesthesia and this may be related to the lassitude and somnolence often exhibited in pregnant women.

2. Water and Salt Metabolism—It has been claimed that both oestrogens and progesterone decrease sodium, chloride and water excretion but this has not been confirmed.

3. Pelvic Ligaments—Certain corpus luteum extracts containing relaxin cause relaxation of pelvic ligaments and absorption of the adjacent pelvic bones in experimental animals.

4. Vascular System—Progesterone is known to cause vasomotor changes and likely plays a part in accommodating the vascular bed to the increased blood volume in pregnancy.

5. Urinary System—Progesterone is said to relax vesical and ureteral muscles.

B. GENITAL EFFECTS

1. Uterus—Progesterone produces the typical secretory type of endometrium in the menstrual cycle not alone but following the action of oestrogens. In animals it decreases the contractility of the myometrium and counteracts the effect of the posterior lobe hormone, in women, however, it actually increases the amplitude of individual spontaneous uterine contractions and the sensitivity of oxytocin (Selye) Clinical data tends to make this subject to debate.

2. Vulva and Vagina—No striking effects are seen with the use of progesterone. It may be

involved in the cyclic epithelial changes.

3. Cervix—Here again, progesterone likely plays a part in the cyclic epithelial alteration. It may also produce the marked honeycomb-like hyperplasia which characterizes the cervical mucosa in pregnancy.

4. Oviducts—Progesterone is considered to inhibit the motility of the oviducts in both women and animals.

5. Mammary Glands—Combined with oestrogens or alone in large doses progesterone causes proliferation of acinar and lobular epithelium.

6. Progesterone aids in the metabolism of oestrogens, facilitates their inactivation and antagonizes their excess.

7. Progesterone suppresses ovulation and inhibits follicle formation.

8. Progesterone exerts a reciprocal inhibitory effect on pituitary gonadotrophins.

9. Pregnancy—Pregnandiol excretion gradually rises in the urine during pregnancy from 5 mgs. per litre of urine at the 4-7 week period, to approximately 90 mgs. per litre at term. It falls immediately prior to labour and disappears 24 hours after delivery.

The corpus luteum is larger and persists for a longer time. It maintains the endometrium in a secretory phase up until 2½-3 months when its function is taken over by the placenta which alone is capable of maintaining the production of progesterone. It is possible that this is the time when spontaneous abortion is apt to occur.

Therapeutic Indications for Progesterone

1. Threatened and Habitual Abortion—This has become one of the more important indications for progesterone. Many reports suggest it is of value in properly preparing and maintaining the endometrium for nidation and continuance of the ovum.

In one case series of 273 women with a history of recurrent abortion 79% showed a normal outcome of pregnancy while in another series of 42 women with a similar history 88% were brought to term by using progesterone. Hamblen, however, reports that progesterone with oestrogen failed consistently to forestall abortion when urinary pregnandiol levels were low. His series shows only a 50% salvage rate of women brought to term. He considers there is no danger of carrying an abnormal embryo to term in this manner. Greenblat recommended implantation of pellets in this condition.

2. Sterility—Progesterone is indicated only when: (a) Organic disease is ruled out, (b) There is clinical evidence by bioassay or endometrial biopsy of progesterone deficiency.

The rationale for use is that inadequate gestational proliferation interferes with nidation of the ovum. Progesterone should be given daily

beginning the 14th day of the cycle and continuing to the onset of bleeding or until conception occurs. It must be remembered that overdosage may cause sterility due to disturbance in cyclic changes and compensatory ovarian atrophy, which is likely due to suppression of anterior pituitary function. One case series reports 75% success in treating women for sterility with progesterone.

3. Functional Uterine Bleeding—This is the largest group where the endocrine abnormality is an excess of oestrogen and an absence or marked deficiency of progesterone. The results of treatment are not consistent, but are often gratifying.

4. Anovulatory Ovarian Failure—This condition is similar to the above dysfunction except that it occurs in the active child-bearing age group. Here the failure is in ovulation and hence corpus luteum formation. Treatment is indicated, if there is undesired sterility or prolonged and excessive bleeding. A cyclic oestrogen-progesterone schedule may be used. It includes complete cyclic substitution with ovarian hormones in a manner comparable to their secretion in the normal cycle. If this fails a 1 to 2 cyclic gonadotrophin schedule may be tried.

5. Primary Amenorrhea—This is usually due to some fundamental defect. Ruling out other factors progesterone may be used here for seven days following a two-week period of oestrogens. It is unlikely that this is any better than using oestrogens alone (Novak). In the vast majority of cases this does not permanently re-establish menstrual function but must be repeated.

6. Dysmenorrhea—In most cases poor results are obtained and the expense is prohibitive. A dose of 20 mg. daily of oval progesterone for two weeks prior to bleeding is said to cause good prevention in 50% of cases. No permanent results are obtained.

7. Eclampsia—The administration of progesterone and oestrogens here is based on the low blood levels of progesterone and high levels of chronic gonadotrophin. Results show that these hormones, unless given very early in the disease have only a temporary palliative effect. This temporary effect may be of importance in carrying the foetus to a viable state.

8. After-Pains—1 mg. of progesterone I.M. is said to relieve this condition, however, Hamblen considers that the use of sedatives and analgesics and the application of a hot water bottle to the abdomen is cheaper and just as satisfactory.

9. Cyclic Mastalgia—Geshichter advises the use of progesterone in this condition. It is said to

relieve breast pain, but produces little objective change in the pathology of cystic and proliferative disease.

10. Pre-Menstrual Tension—The results have not justified the expense. The production of tension by progesterone has been described.

Standardization of Progesterone

One International Unit equals the activity corresponding to that of 1.0 mg. of progesterone. This activity is measured by several methods of bio-assay which in order of preference are as follows: 1. Corner and Allen Test. 2. Clauberg Test. 3. McPhail Test. 4. Pincus and Werthessen. All the above tests are based on the ability of a known amount of progesterone to produce changes in the endometrium of rabbits.

5. Fevold Test—based on the ability of certain corpus luteum extracts, to cause relaxation of pelvic ligaments in guinea pigs.

6. Sexual Susceptibility Test.

7. Vaginal Mucification Test.

8. Deciduoma Test—the endometria of rats and guinea pigs respond to trauma by forming deciduomata.

9. Direct application to rabbit endometrium.

10. Examination of endometrial curettings.

Commercial Preparations

These may be (1) Natural or Synthetic, (2) Crystalline or Non-Crystalline (according to the degree of purification).

Examples may be listed as follows: One text gives 81 preparations!

1. Natural Non-Crystalline Progesterone—Extracts from animal ovaries.

e.g. Lipo-lutin (P.D.) } Solution in oil for
Progestin (Upjohn Co.) } I.M. use

2. Synthetic Crystalline Progesterone—Prepared synthetically from stigmasterol (a sterol in soya beans).

e.g. Lutocylin (Ciba) } I.M. in
Progestin (Roche Organon) } Oil

3. Synthetic Crystalline—Anhydro-hydroxy Progesterone—Prepared synthetically from estradiol.

e.g. Lutocylol (Ciba) }
Progesterol (Roche Organon) } Orally by
Pranone (Shering) } tablets

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Psychiatry

Pseudo-Feeble-mindedness*

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Every physician has in his practice a group of children who have been diagnosed as feeble-minded, mentally deficient, or retarded. The purpose of this paper is to stimulate these doctors to examine their attitudes regarding this group, and to consider whether those attitudes are in keeping with recent scientific developments in this area.

About three-quarters of a century ago "the insane" were considered by most physicians as a homogeneous group of hopeless individuals. The classification of this group carried out by Kraepelin, and the genetic-dynamic approach of Freud and Meyer, revamped medical attitudes so that now this group is considered in a heterogeneous, highly individualized manner.

There is a rather similar change going on in modern thinking about the feeble-minded children. Just as the concept of the "insane" has pretty well vanished from medical use, so is the concept of the "feeble-minded" being challenged. Many classifications have been made, many professional people are beginning to apply their knowledge to this problem, and there is good evidence that progress is underway. Consideration for this problem is now moved from a homogeneous, undifferentiated approach to a highly individualized consideration of the needs of each patient. After an interest is aroused in these cases, it is a little difficult to figure out why they were all grouped and considered as an entity of such hopeless prognosis.

I wonder if it is not just a human failing to isolate that which does not seem good or useful with the hope that it will disappear and be of no further trouble. I am sure that this is a general cultural feeling that is present because we are so dependent upon education and conformity. This group as a whole can be considered as suffering from the disorganizing and inhibiting effects of emotional deprivation. One thing of which child psychiatry can be most sure is the effect of a non-stimulating environment on children.

Goldfarb studied two groups of children and adolescents. One group consisted of individuals who had been reared in orphanages during the first three years of life. The control group consisted of individuals who had been brought up in foster homes from the beginning. The orphanage children had all the advantages of modern child care as far as their physical needs were concerned. Diets had been calculated scientifically, ventilation

and room temperatures had been regulated carefully, and sources of infection had been kept away with utmost caution. However, none of these children had an opportunity to relate himself to any one adult who could give him necessary affection and stimulation. The attention they received was mechanical. The children of the foster homes did not have the advantage of strictly supervised sanitation, but they had an opportunity to play, be loved, and be taught by their foster parents. The children from the orphanage developed severe personality difficulties and their I.Q.'s were found to be 20 or 25 points lower than the foster home group.

In addition to or in the place of suffering from deprivation, the feeble-minded often suffers from agents that are just as noxious as the extremes of heat, an overdose of chemical agents, or invasion by pathogenic organisms. These agents are certain parental feelings or attitudes towards the child. These noxious attitudes that accompany the life of the feeble-minded are often based on guilt feelings for having brought such a child into the world or for unconscious desires to be rid of the child. We therefore see extremes of behaviour on the part of parents towards these children. One parent in order to deny or repress these guilty feelings floods the handicapped child with oversolicitude, while almost neglecting the normal children of the family. Another parent overtly rejects the child and continually beats him brutally. The child himself knows that he is different from anybody else and recognizes himself as an unwanted and shameful thing that has to scurry out of sight whenever the door bell rings or visitors come to see the family. It is from the group of overtly rejected feeble-minded children that the defective delinquent, with all his hate for authority, arises.

If a child potentially border-line intellectually is forced into isolation by parental shame and is considered an unwanted, horrible thing, or is even treated with dull, drab indifference during his early childhood, he will be functionally an idiot or a defective delinquent with no capacity for education or rehabilitation.

In 1945 Rapaport published his brilliant formulation of a set of assumptions which are not necessarily correct, but have proved themselves useful in the clinical evaluation of test results. His second assumption reads as follows: "The maturation process is fostered or restricted by the wealth or poverty of stimulation in educational environment during the earliest formative years."

Experience with Cerebral Palsy children in the past few years has demonstrated how the mind

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and body can overcome many difficulties with skilled support. Educationalists working with intellectually inferior groups of children have demonstrated how a child can pass from social inadequacy to social adequacy with proper training.

Kanner has found it useful to consider the unintelligent under three separate headings:

"The absolutely pathologically, irreversibly feeble-minded; the relatively, culturally trainable feeble-minded; and the apparently feeble-minded or pseudo-feeble-minded."

The advantage of a grouping of this kind is that it helps in developing a programme for these children.

The absolutely feeble-minded require custodial management. This is available in Canada in a few places, but in general there is a tremendous variation in the standards of housing, personnel, and health care.

The relatively feeble-minded, or intellectually inadequate, require adjustment and guidance. Many communities fail to realize their responsibility to these individuals. Many can learn to be useful citizens and make a life-long contribution, if proper training, guidance facilities, and personnel are available.

The group that will interest most physicians is the apparently feeble-minded or pseudo-feeble-minded. Above all, they require adequate diagnosis and specific treatment for their handicap which has prevented the full use of their intellectual endowment.

Some of the groups of individuals that fall into the latter category of pseudo-feeble-minded include:

1. Children with uncompensated visual, auditory or motor handicaps.
2. Children with no or delayed speech development.
3. Delayed general development including mental development due to an early serious illness.
4. Individuals who have brain injuries interfering with some aspect of intellectual activity.
5. Emotional problems such as schizophrenia or obsessive preoccupation.
6. Problems of psychometric examination.
7. Specific learning disabilities.

Many of the children in this group have similarities. There is some lag in development, most noticeable in the area of speech. The child shows a great deal of restlessness and distractibility, and has difficulty in following instructions. The family usually suspects that something is wrong with the child early in the first year, but are reassured by the examining doctor that the child is physically well and probably will grow out of his difficulty.

Starting sometime in the second year the family begins making the rounds of the various

doctors, and are never able to find out what exactly is wrong with their child. They see many different doctors and receive many different opinions—the most consistent being intellectual retardation. The mother usually has quite a few examples of situations which are not typical of the behavior of retardation. The physicians have rather discredited these occasions on the basis of over-optimism on the part of the mother. Psychological testing is usually very difficult in these cases, and unless the psychologist has had considerable experience in interpreting the findings, grave errors can be made.

A word of warning should be interjected at this point concerning the use of psychological testing. So often physicians are interested only in the numerical results of a psychometric test. When this result is low or abnormal, it is virtually no more useful than a report of a chest x-ray stating that it was so. If a chest x-ray is abnormal you can think of a whole series of questions you would want answered before you made any interpretation to the family. We all know what the reaction of a patient would be if we simply told him that his chest x-ray was abnormal and there was not very much that could be done. Similar to the parents of the feeble-minded child, they would consult another doctor. The questions that should come to mind when a low I.Q. is encountered are also numerous. The first is—how competent is the tester, and what are the tester's interpretations of the low results? Is the child complete in his senses, can he hear, see, and talk? More than once I have been misled by a child who is having a complete work-up in a hospital. Frequently he has had atropine drops in his eyes because he is going to see the ophthalmologist. This becomes a genuine case of temporary pseudo-feeble-mindedness.

Most of the standard tests assume that the child has normal sight and hearing and that he can respond with normal motor co-ordination. It is also assumed that the child co-operates during the test and that he has completely understood the examiner. Language difficulties can obscure the test results. Children who have brief lapses of consciousness due to petit mal will often score much below their real intellectual endowment. It is well known that emotional problems in children will affect the score in the test. The child who is negativistic, pre-occupied or upset due to separation from his mother will frequently score below capacity. It is in this group that there are many misdiagnoses. This is not surprising since these children react to life situations atypically and for practical purposes function as a feeble-minded child.

Derry is an example of a pseudo-feeble-minded child due to hearing difficulty, a serious debilitating infection in childhood, and parental rejection.

When first seen at the age of 4 he was completely unmanageable. The mother was continually asked to move from her lodgings because of the child's uncontrolled behavior. The psychological report stated, "since the child is highly distractible, considerable difficulty was encountered in the testing situation. No I.Q. estimate could be obtained. Derry responded to those parts of the test involving mechanical dexterity and motor co-ordination, but was inattentive and unresponsive to all verbal situations." Some evidence against total deafness was cited.

Derry never was wanted by his parents. Pregnancy was complicated by rubella in the latter part of the first trimester and by a car accident during the last trimester. Birth was normal. A severe gastroenteritis occurred in the neonatal period and was sufficiently marked to threaten his life. As an infant he was extremely irritable at night and on one occasion in a fit of rage his father threw him across the room.

During the third year of life the mother and father separated. Derry had bouts of hyperpyrexia of unknown origin throughout his infancy. His tonsils and adenoids were removed at the age of 3. He was in a car accident and broke his right foot the same year. Derry's mother had been told repeatedly that he was feeble-minded.

An overall plan was made for Derry. He attended a nursery school for the deaf, was supplied with a hearing aid, and both mother and child received psychotherapy. At the age of 5 Derry showed marked improvement. He had acquired a few words and had settled down considerably in his behavior. He will always be an odd person, but it is felt that with continued education and psychiatric guidance he will emerge out of the class of pseudo-feeble-minded, becoming a useful citizen. Recent psychological tests confirm that he is not feeble-minded.

The group of children with brain pathology, clinically known as the cerebral palsy group, are often considered to be hopeless mental defectives because of their motor, visual and auditory handicaps. The accepted modern opinion is that only about 30% of these children have been affected intellectually by the brain damage. Encouraging results are being made in rehabilitation clinics where the combined efforts of physicians, physiotherapists and educationalists are pooling their efforts to help these children develop their potentialities.

There is another group of children identified by Kanner under the name "Early Infantile Autism." This clinical group is probably a manifestation of the schizophrenic reaction in an infant. These children are sometimes referred to as "Kanner's refrigerator babies." They are often considered to be morons because they are mute or have a language of their own. Yet early in

childhood they sometimes accomplish amazing feats of memorization—poems, songs, lists of names, etc. Language is seldom used to communicate ideas to people. There is really very little recognition of people. People are more often treated as things. They show no interest in new faces or in the conversation of others. There is an anxious obsessive desire for sameness. New places are extremely upsetting, new routines cannot be tolerated, and a certain compulsive orderliness must be maintained. These children are often good-looking, with a facial expression suggestive of serious-mindedness.

There is an interesting common denominator in the parents of these children. They are all intelligent and often professional people. Their main interest is in objective scientific things, and their approach to their children reflects this same attitude. They take great delight in developing the memory feats of their children at an early age. They supply the physical needs of their children, but cannot be considered warm and affectionate with them.

Careful psychological testing will show normal or superior intelligence when formboard tests are used. In the verbal and social areas they often do quite poorly.

Certain children of normal or above normal intelligence have specific learning disabilities. The best known of these is the reading disability. It is a fairly common disability—10% of the school population being handicapped in this way. These children, more often boys than girls, may be good in every other subject where the ability to read is not essential. If they have been given group reading intelligence tests where speed reading is essential, they will naturally do poorly. Whereas on individual intelligence tests like the Binet, they will do quite well. Any child whose reading is two years below his expected grade standard, and who on the Binet has normal or superior intelligence, should be considered as a reading disability and should receive special education.

The psychological implications of an unrecognized disability on a normally or superiorly intelligent child are boundless and affect the whole source of security of the child. Misunderstanding the situation, parents and teachers recognize his innate abilities in other areas and feel that he is just stubborn and lazy. He can become completely discouraged about learning and school, and often turns his abilities to less profitable endeavors. With proper reading training this disability can be improved, and many of these children can go on to university.

Diagnosis of many of these cases often can be arrived at only through careful observation and multiple examinations. Even with the diagnosis of pseudo-feeble-mindedness due to one of the above causes, the parents still have a tremendous

problem ahead of them. When the proper facilities are present, the parental anxiety can be released due to the fact that a plan can be developed and something concrete can be done. When there are no facilities, the problem remains the same as that of the feeble-minded child. The inability of parents to do anything concrete, to develop a plan, or to find anybody really interested in their problem creates a great deal of animosity for those people whom they feel should take the responsibility. These parents need much more than to be seen only once and to be told that their child has what they already suspected. They require long-term guidance and should feel that the physician is interested in their problem. They should also know that he will be ready to help work out plans to meet the new problems that arise as the inadequate child goes through the various stages of maturation. In other words, these parents need support to be able to carry the responsibility which they acquired when they gave birth to a retarded child, and this support needs to be felt by them for a long period of time. The concept of the needs of the parents challenges the practice of one visit in which examination, diagnosis, and prognosis is arrived at by the physician. The parents will have to be helped to realize that this is a long-term living situation, and that many visits will be necessary; many situations will arise that they will want to talk about with an interested, sympathetic non-blaming counsellor. They will have to understand that their child has a capacity to mature like other children, but in a different way. They will have to learn to deal with their child with modified stimulation to fit his needs.

One of the great advances in psychiatry which came out of the last war was the realization of the value and effectiveness of group therapy. Intensive individual therapy was not practical because of the numbers of psychiatric casualties, and the relatively few psychiatrists available for therapy. In some ways this is similar to the amount of time a busy doctor has available for the child and parents of the feeble-minded. These parents are admirably suited for group therapy. For them to meet other people with similar, or perhaps less promising problems, makes them view their difficulties in a new light. If physicians could bring small groups of parents together, it would be found that there is such energy and determination present in this group, that constructive community-wide developments for the proper care of these patients would be considered before long.

During the past year in Montreal a group of these parents gathered together and organized as "association for the parents and friends of the intellectually handicapped child." This association has already a large membership of persons and has the interest of the educationalist, psychologist, social worker, and medical profession. As the association develops, more help will be required from these professions to cope with the needs of the group. This is a wonderful demonstration of democracy at its best. There is no thought of extermination or sterilization. The direction is toward what can be done to help these handicapped children feel that there is a place for them in this world. A place where they can receive the common emotional needs of all children—love, affection, acceptance and approval, as well as the common physical needs of good housing, good food, good medical care and good educational facilities.

The purpose of this paper was to arouse the interest of the physician having children in his practice whom he considers feeble-minded. It is hoped that by awakening his interest in this hitherto discouraging group of children, he will review these cases, arrive at a diagnosis and present a prognosis to the parent in keeping with present day medical knowledge and the facilities available to the patient.

"Nothing can be done for your child—he is feeble-minded" in most cases is a prognosis of the past. In the light of our present knowledge, the physician can no longer say this. More in keeping with recent advances he might say, "Your child requires special training that is or is not available in our community at the present time." He may be able to do a great deal to arouse the interest of the parents in forming groups. These groups can result in the better understanding of the problem, and can lead to the acquisition of facilities for the proper care of these children.

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Tuberculosis

Tuberculin Patch Testing of Winnipeg School Children

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Sanatorium Board of Manitoba

During the winter months of 1951 the Sanatorium Board of Manitoba and the City of Winnipeg Health Department carried out a joint project of tuberculin patch testing a sample group of elementary school children in the City of Winnipeg.

The purpose of the survey was two-fold:

1. A method of discovering unsuspected active tuberculosis among the contacts of the elementary school child with a positive tuberculin test.

2. To establish the approximate percentage of elementary school children who have been exposed to tuberculosis in:

- (i) A congested, over-crowded residential area.
- (ii) A non-congested residential area.

Permission to conduct this survey was granted by the Winnipeg School Board providing the written consent of the parent was obtained before a patch test was applied to any child. Such consent was granted by almost 100% of the parents approached.

The patch test survey was carried out in a total of ten schools. Eight schools were selected in the residential areas where the largest number of active cases of pulmonary tuberculosis had been discovered in the past three years. These eight schools were all located in a congested, over-crowded area of the City. Two schools were selected to serve as a comparison group in areas where the smallest number of active cases had been discovered in the past three years. These two schools were located in non-congested, better class areas. The children tested ranged in age from 5 years to 15 years. See Table 1.

Patch tests were applied in the various schools on Mondays by Dr. S. L. Carey and Mr. H. Daneleyko of the Sanatorium Board of Manitoba, removed on Wednesday by the school nurse and interpreted on Friday by Dr. Carey and Mr. Daneleyko. Mrs. Gray, a graduate nurse, was employed by the Sanatorium Board and attached to the nursing Division of the City Health Department to visit the home of every child with a positive tuberculin test in order to explain the significance of the test to the parent and to arrange for a chest X-ray of all adult contacts.

A total of 3,294 pupils were patch tested and 259 or 7.9% were reported as having a positive tuberculin patch test. This 7.9% occurred as follows:

244 of 2,846 or 8.5% of children resident in congested areas.

15 of 430 or 3.5% of children resident in non-congested areas.

Of the total of 259 children with positive patch tests 46 or 17.8% were contacts of known cases of tuberculosis and 39 or 15.0% were children who were recent immigrants from Europe. If these two groups totalling 85 are excluded from the total of 259 positive tests, then 174 or 5.1% of the children tested had been unknowingly exposed to tuberculosis.

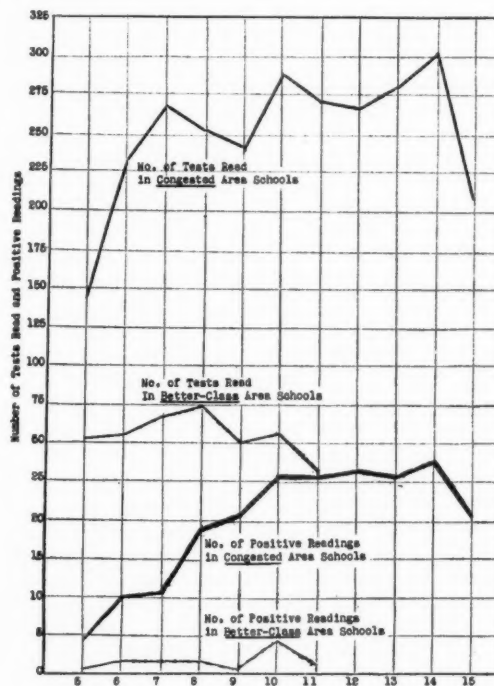


Table 1
Tuberculin Survey of Ten Winnipeg Public Schools
(8 in Congested Area; 2 in Better-Class Area)
January to March, 1951
Ages of Children

The age groups of elementary school children with positive reactions are shown in the attached tables and it will be seen that among children resident in over-crowded residential areas the percentage of positive tests is approximately the same as the age of the age-group tested. (See Table II). In the non-congested residential areas the percentage of positive reactions is slightly less than half of the age of the age group tested.

In spite of our efforts, such as a personal visit by the nurse to the parent concerned and in some cases two visits, followed by telephone calls and

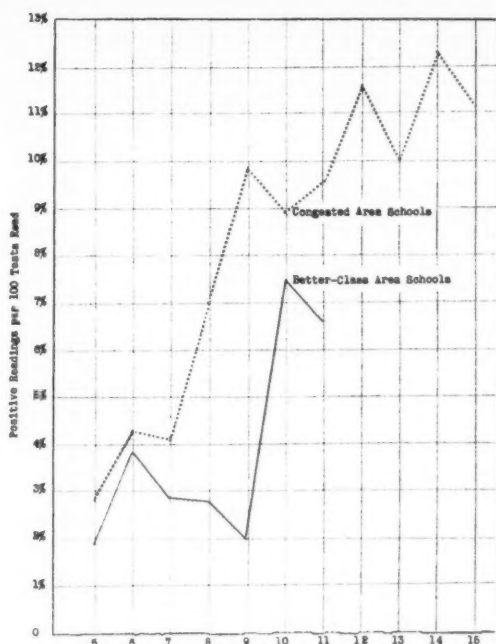


Table 2
Tuberculin Survey of Ten Winnipeg Public Schools
(8 in Congested Area; 2 in Better-Class Area)
January to March, 1951
Percentage of Readings Positive in Each Group
Ages of Children

letters only 260 or 43.1% of the 603 adult contacts who agreed to have a chest X-ray ever reported for such an X-ray. Among this group one case of minimal active pulmonary tuberculosis was discovered in a 33-year-old father of a 10-year-old school child with a positive tuberculin test.

The over all incidence of 7.9% of elementary school children with a positive tuberculin patch test was approximately what was anticipated. However the finding of over 11% of positive reactions in two elementary schools (Argyle and Victoria Albert—623 pupils)—was considerably higher than expected.

Although one active case of pulmonary tuberculosis was discovered among the 260 adult contacts examined, the volume of work and expense involved in finding one such case would not at the present time seem to justify a large scale patch testing survey of the elementary school children in Winnipeg.

The failure of contacts to report for X-ray was disappointing and until some method is evolved which will insure a higher percentage of contacts reporting for chest X-ray then the patch testing of elementary school children as a means of case-finding is not a practical procedure.

Medicine

Tularemia*

A Study Based on the Incidence of Positive Agglutination Tests Against *P. Tularensis* in the Indian Population of Manitoba and North-Western Ontario

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In the spring of 1950 we were notified by the Game and Fisheries Branch of the Department of Mines and Natural Resources of the Province of Manitoba that many beaver and muskrats in the northern part of Manitoba were dying of a disease that might be tularemia. As Indians are very closely associated with these animals in trapping and the treatment of skins we had some specimens of blood of Indians sent out for examination from those areas where the animal deaths seemed to be most numerous in N.E. Manitoba and N.W. Ontario. The results indicated a very high exposure rate of Indians to tularemia. We extended this survey by testing the blood of Indians and Eskimos in sanatoria with tuberculosis, Indians in hospitals and by sampling the blood of residents on reservations in all parts of Manitoba and N.W. Ontario. The result forms the basis for this paper. It should be clearly understood that we have yet to find a clinical case in Indians.

The history of tularemia dates from 1911 when McCoy¹ described a plague-like disease among the ground squirrels in Tulare County, California. In 1912 McCoy and Chapin² isolated the organism and named it *bacterium tularensis*. In 1914 the first human case was described by Wherry and Lamb in the United States. The first case in Canada was reported by MacNabb³ in 1929 from the Temiskaming district of Ontario. Shaw and Jamieson⁴ reported a case in Alberta in 1932. The first case in Manitoba was reported in 1940. It was diagnosed by agglutination of a sample of serum at the Ontario Provincial Laboratory in Fort William. No other cases were reported in Manitoba except one from Sprague reported from Minnesota until the winter of 1949-1950 when four cases were diagnosed at The Pas and one at Ste. Rose du Lac⁵, all trappers. (Table No. 1). The widespread nature of this disease is indicated by the reporting of two cases from Norman Wells, N.W.T., by Dr. A. MacKinnon⁶ in 1947. In the west north central states of the U.S.A., including Minnesota, the Dakotas, Iowa, Missouri, Nebraska and Kansas, over a hundred cases are diagnosed each year. We have no record of cases in Saskatchewan. I do not doubt that we have had cases

*Presented at the Annual Meeting of the Manitoba Medical Association, Winnipeg, October 10th, 1951.

Table No. 1
Tularemia Cases Reported in Manitoba

Date	Race	Sex	Age	Occupation	Location	Diagnosis	Contact	Highest Titre
1940	White	F	Child	School	Lac du Bonnet	Laboratory*	Squirrels	1:200
1946	White	M	Adult	?	Sprague	Laboratory†	?	?
1949	White	M	48	Trapper	Ste. Rose	Laboratory	Rabbits	1:10,240
1950	White	M	32	Trapper	The Pas	Laboratory	Muskrats	1:320
1950	White	M	30	Trapper	The Pas	Laboratory	Muskrats	1:5,120
1950	White	M	20	Trapper	The Pas	Laboratory	Muskrats	1:10,240
1950	White	M	56	Trapper	The Pas	Laboratory	Muskrats	1:2,560

*Diagnosed at Fort William.

†Diagnosed in Minnesota.

in Manitoba that were not reported, one deterring factor having been the lack of the specific antigen at the Provincial Laboratory until the last few years.

During the period 1929-1935 there were 41 cases reported in Ontario based on macroscopic agglutination tests positive in a dilution of one in fifty or greater. Bow and Brown⁷ reported 40 cases of tularemia in Alberta during the period 1931-44.

During the period 1938-1950 the Ontario Department of Health Laboratories performed 57,814 agglutination tests on sera from patients suspected to be suffering from enteric infections or brucellosis. Twenty-three cases of tularemia were diagnosed with one death. Dr. Allin of the Ontario Department of Health Laboratory at Fort William reports having performed 2,018 of the above tests and found only four positive. In 1950 examining blood from Indians, he found seventy eight positive out of 605 specimens tested.

We have had blood from 2,942 Indians examined of which 344 were positive to tularemia antigen. This is a percentage of positive tests of 11.7 compared with a fraction of 1% in the general population.

The location of Indians presenting positive agglutination can be noted on the map of the surveyed area. (Map 1). You will observe that the highest incidence lies in the more northern part of this area predominantly north of 53°. We find the percentage of positives to the south is 4.4 and that north of this latitude to be 22.3. (Table 2).

Table No. 2
Laboratory Agglutination Tests in Indians in Manitoba and North-Western Ontario

	No. of Tests	Positive	Percentage Positive
South of 53° latitude	1,763	77	4.3
North of 53°	1,177	267	22.6
Total	2,940	344	11.7

The laboratory tests were made on Indians in the eleven Indian agencies in the Manitoba and North Western Ontario area. (Table 3).

The percentage of positive tests in males is somewhat larger than that in females. The youngest Indian showing a positive agglutination was two years and the oldest eighty-eight years of age.

The evidence for the prevalence of tularemia is much greater in The Pas and Nelson River areas which cover the more northern part of Mani-

Table No. 3
Laboratory Agglutination Tests in Indians in Manitoba and North-Western Ontario

Indian Agencies:	Positive		Negative		Total		Total
	Male	Female	Male	Female	Male	Female	
Portage	0	0	146	107	146	107	253
Dauphin	7	1	100	90	107	91	198
Fisher River	8	1	120	75	128	76	204
Clandeboyne	3	1	126	52	129	53	182
Norway House	4	4	91	44	95	48	143
The Pas	26	15	118	94	144	109	253
Nelson River	75	22	144	125	219	147	366
Kenora	0	1	12	25	12	26	38
Fort Frances	1	1	37	5	38	6	44
Sioux Lookout	95	74	297	284	392	358	750
Port Arthur	0	15	192	255	192	270	462
Eskimos	0	0	11	3	11	3	14
Others	0	0	10	25	10	25	35

Total 219 135 1404 1184 1623 1319 2942
Percentage of Positives 11.7.

toba and the northern part of the Sioux Lookout agency which covers most of the Patricia area of North Western Ontario.

Titres of positive tests show a wide range, many indicating by the high titre fairly recent exposure. (Table 4).

Table No. 4
Laboratory Agglutination Tests in Indians in Manitoba and North-Western Ontario

Number	Titres					
	1/25	1/50	1/100	1/200	1/400	1/800 1/1600
	91	87	76	50	30 (x)	9 2

(x Including 4 reported as 1/400 plus)

An unusual aspect of this survey, which was conducted over a period of one year from June, 1950, to August, 1951, was the absence of any reported cases of clinical disease. This is partly explained by the remoteness of the areas of highest incidence from medical attention and the relative mildness of the disease, especially from the stoical viewpoint of the bush Indian. Personal inquiry of Indians having very high titres revealed no history of disease although one field officer of the Game and Fish Branch of Manitoba was told by an Indian that some of his people were sick with the disease that was killing beaver. One case reported in an Indian by a doctor East of Kenora as tularemia cleared up rapidly under penicillin so he changed his diagnosis.

In 1947 many beaver had died at Sachigo, East of the Manitoba-Ontario border. In 1949 an attempt was made to trap out all beaver along the provincial border in this area to keep the disease out of Manitoba. This was not successful.

When the disease broke out among beaver and muskrats in the winter and spring of 1950 in

Northern Ontario and Manitoba, carcasses of beaver and muskrats were flown out and examined by provincial biologists of both provinces. In Ontario the bacteria were isolated and the diagnosis confirmed. In Manitoba the pathological signs of multiple small abscesses in the liver and spleen of beaver were indicative of the disease.

The Division of Research of the Department of Lands and Forests of Ontario isolated *P. tularensis* from dead beaver from the Weenusk area of N.W. Ontario, midway between Big Trout Lake and Weenusk on Hudson Bay and also found suggestive post mortem signs of tularemia in beaver from Big Trout Lake, 200 miles north of Sioux Lookout. The bacteria has also been isolated from beaver from Dryden, Ignace and Gananoque and from a muskrat on Lake Erie.

Agglutination tests of blood from Indians in N.W. Ontario was correlated with traplines that reported dead beaver. Of thirty-four traplines twenty-five (73%) had one or more positive agglutination tests in Indians, three were negative and six were not examined. On seventy-four traplines where no dead beaver had been reported, thirty-eight had one or more Indians positive to tularemia, thirty-six had all negative tests.

The evidence for the transmission of tularemia from beaver and muskrats to man is still circumstantial but is highly suggestive.

1. The areas reporting the greatest number of beaver and muskrat deaths corresponds to that of the highest percentage of Indians whose blood agglutinated *P. tularensis*.

2. The Indians had intimate contact with live and dead beaver.

3. Fifty per cent of Indians with a positive agglutination showed titres of 1:100 or over indicating fairly recent infection.

4. *Pasteurella tularensis* has been recovered from dead beaver in the area of the epizootic and post mortem changes were indicative of tularemia.

Since McCoy in 1911 found the disease in ground squirrels in California, the squirrel and rabbit have been considered the chief carriers and accountable for 90% of cases. However, vertebrates found to harbour tularemia include grouse, owls, mice, fox, dog, cat, beaver, muskrat, rat, sheep, gull, lemming, skunk, coyote and deer. There is evidence that certain species of ticks act as reservoirs and survival in at least 54 arthropods has been reported.^{9, 10, 11, 12} Infection of water with a resultant epidemic has been reported in Russia¹³ and in the U.S.A.¹⁴ In the latter epidemic the infections was associated with an epizootic in beaver and extended over a period of four years indicating repeated infection. Survival for at least thirty-three days in water has been noted. The bacterium has not been found to survive in fish¹⁵.

The method of transmission in this survey has

not been established. Insects except ectoparasites can be eliminated as this epidemic occurred in winter and early spring. Water as a carrier must be considered yet many families had only one positive reactor. Direct transmission through skin abrasions would seem to be the logical route. One can discount Indian statements that they had no sore on the hand or swollen glands for their memories are very brief in medical matters and skin abrasions are quite frequent.

This may be the first instance in Canada of the association of beaver and muskrat with the transmission of tularemia.

Little has been done in this section of Canada on the epidemiology of this disease due to the scarcity of cases. There is need for further study of this subject in correlation with the study of the disease in animals.

The real reason for this presentation is first to refresh your memories; second, to bring to your attention the presence of many people in this section of the country who are perfectly healthy, yet have agglutinins for *P. tularensis* and third, that the disease is not as rare as generally believed.

Tularemia Has Five Clinical Types

1. **Ulceroglandular**—A papule forms where the bacteria enter the skin, quickly becomes pustular, sloughs and leaves an ulcer with raised edges which heals slowly. The regional lymph nodes enlarge, become tender and may suppurate.

2. **Glandular** — without detectable primary lesion.

3. **Oculoglandular** — An intense conjunctivitis with enlargement of preauricular, parotid, submaxillary and cervical glands. Small ulcers form on the conjunctiva.

4. **Pneumonic**—relatively rare.

5. **Typhoidal** — with systemic symptoms resembling typhoid fever.

6. **Anginose** — lesions on tonsillar and oropharyngeal tissues.

Incubation is one to seven days with the usual symptoms of a bacterial infection lasting from two to four weeks.

Complications are pneumonia, pleural effusions and suppuration of regional lymph nodes.

Diagnosis

If a patient has an ulcer on the hand or conjunctivitis with swelling of regional lymph nodes, a slight fever and general malaise and is a trapper or Indian one should at once think of tularemia. A sample of blood for agglutination with tularemia antigen will confirm this. If negative repeat it in a day or two. A rising titre of agglutinins should be demonstrated to substantiate the diagnosis¹⁶.

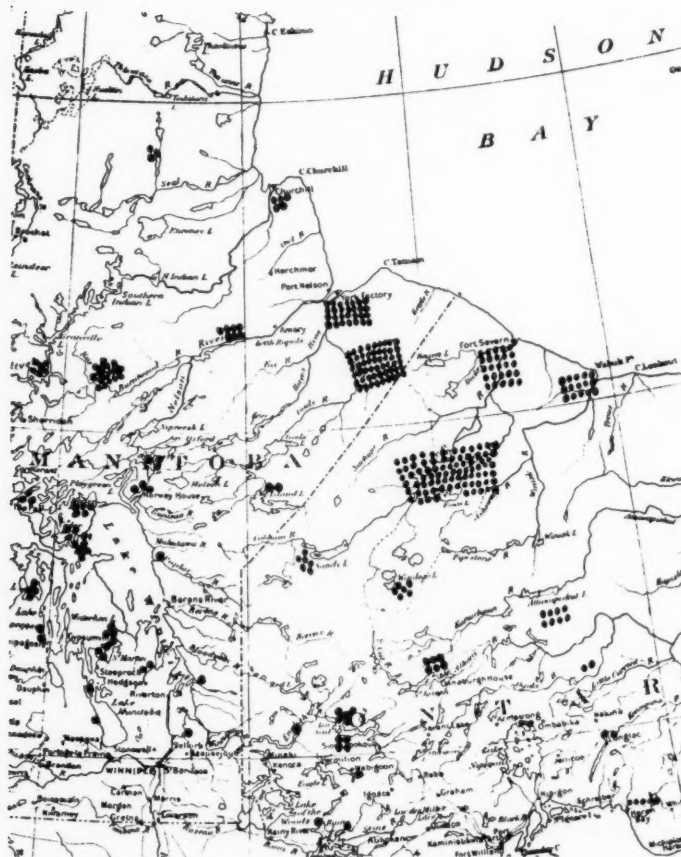
One should remember that an agglutination without the above signs and symptoms does not necessarily mean tularemia especially if there is an equal or greater agglutination of brucella abortus.

Agglutination of blood with *P. tularensis* is considered to be highly specific and to last for years.

In this survey a number of specimens of blood were also tested with the antigens of *B. Abortus* and *B. Suis*. As you will note out of 42 specimens, ten agglutinated *P. tularensis* and none *B. Abortus*, out of 340 specimens, eleven agglutinated *P. tularensis* and one *B. Suis*. (Table 5).

Table No. 5
Laboratory Agglutination Tests in Indians in Manitoba
and North-Western Ontario

No. of Tests	<i>P. Tularensis</i>	<i>B. Abortus</i>	<i>B. Suis</i>
42	10	0	
340	11		1



Location of Positive Agglutination Tests in Indians 1950-1951

Treatment

Streptomycin $\frac{1}{2}$ to 1 gram a day in divided doses until temperature is normal for three or four days.

Summary

1. The blood of 2,942 Indians, mainly Cree, Saulteaux and Ojibway tribes of north western Ontario and Manitoba showed 344 agglutinations of *P. Tularensis*.

2. The majority (80%) of these were from Indian reservations where many beaver and muskrats had died of tularemia in 1950.

3. No cases of clinical tularemia in Indians were seen.

4. The significance of this survey and the relationship with animal and water borne disease is considered worthy of further study.

This survey was made with the co-operation of the Directors of the Provincial Laboratories at Winnipeg and Fort William, the Superintendents of the Fort William Sanatorium, the Brandon Sanatorium, the Clearwater Lake Sanatorium and the Indian hospital at Sioux Lookout as well as personnel of the Indian Health Services to whom our grateful thanks is extended.

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Case Histories—Surgical

Carcinoma of Thyroid With Metastases to Greater Trochanter

S. S. Peikoff, M.D., F.R.C.S. (Ed.)

This is the eighteenth of a series of Case Histories which will appear in the Review each month. The purpose of these publications is not to present rare or unusual cases but rather to consider the routine management of common surgical cases.

Case No. 47-6236. Mrs. C. H., St. Boniface Hospital. Color, white. Age, 50 years. Occupation, housewife. Date of admission, January 20, 1947. Date of operation, March 25, 1947. Date of discharge, June 19, 1947.

Complaint on Admission

Pain in left hip, radiating to knee and ankle. 6 months. Inability to walk, 1 month.

Present Illness

In July, 1946, the patient first noticed a dull aching pain in the left hip, associated with a tired feeling in the left leg, which was worse at night. The pain became more and more persistent. About mid-August, she began to limp. By October the pain was continuous, severe and boring in character. Her doctor in the country was consulted, made a diagnosis of sciatica, and prescribed heat and aspirin, with no relief. The pain became unbearable during the night and was aggravated by coughing, sneezing or straining at stool. Four or five Frosts 292's, taken at one time, failed to give relief. In December she could no longer walk and was forced to remain in bed.

Inventory by Systems

Eyes—Vision fair. Wears glasses for reading. No diplopia. No blurring.

Ears—Hearing good. No tinnitus. No vertige.

Respiratory—Frequent colds and sore throats in past year. No cough. No dyspnoea. No hemoptysis. No pain in chest.

Cardio-vascular—No substernal pain. No palpitation. No dyspnoea.

Gastro-intestinal—Appetite good. No dyspepsia. No nausea. No vomiting. Bowels regular. No melenia. No history of jaundice.

Genito-urinary—Nocturia once or twice a night in past year. Occasional burning on micturition. No hematuria. Occasional incontinence on coughing.

Nervous system—Irritable and unable to sleep because of pain. Feels weak and tired. No amnesia. No aphasia. No paralysis.

Metabolic—Loss of weight (180 to 175 pounds) in past 3 months.

Menstrual—Menopause in 1942—no bleeding since. Slight vaginal discharge.

Obstetrical—Para ii, gravida ii. Both pregnancies and labor normal. No miscarriages.

Musculo-skeletal—Pain in left hip and leg as described in present illness. Other extremities normal.

Past History

Usual childhood illnesses. Psoriasis beginning in 1927. Appendectomy 1945. Accidents—1945, thrown from a sleigh and dragged 30 feet by horses. Developed some pain in left hip and thigh after this.

July, 1946, slipped and injured left leg again.

Family History

Mother—Alive and well.

Father—Alive and well.

Four sisters—Alive and well.

Four brothers—Alive and well.

No family history of T.B., diabetes, carcinoma, etc.

Physical Examination

Heavy set, obese woman, with ruddy complexion, lying in bed with her left leg supported on a pillow, and showing obvious signs of pain. Head and Neck:

Cranial nerves—Intact.

Eyes—Lids and conjunctival normal. Pupils equal, react to light and accommodation. Fundi normal.

Ears—Auditory canals and tympanic membranes normal.

Nose—Normal.

Throat—Normal.

Tongue—Normal.

Larynx—Vocal cords normal and move freely.

Neck—Marble-sized, firm swelling in region of right upper pole of thyroid gland, appears to be fixed to thyroid cartilage.

Chest:

Heart—Rhythm regular, rate 72 per minute. No murmurs. No apparent enlargement. Blood pressure 150/86.

Lungs—Thoracic cage normal. Movements equal and symmetrical. Tactile fremitus normal. No dullness to percussion. Breath sounds normal with no adventitious sounds.

Mammæ—No palpable nodules. Nipples and areolæ normal.

Abdomen—Obese. No dilated veins. Right paramedian scar present. No distension, tenderness or rigidity. Liver and spleen not palpable. No palpable masses.

Vaginal examination—Grade ii cystocele. Mild endocervicitis. Uterus normal in size with slight retroversion. Adnexa not palpable.

Rectal examination—Essentially normal.

Spine—Normal curvatures. Movements guarded but flexion and extension good. Rotation

produces pain. Pain on percussion of lumbar region.

Extremities:

Upper—No wasting or deformities. Movements good. No clubbing of fingers. Reflexes equal and active.

Lower—No deformities. Marked varicosities of left long saphenous vein. No oedema or ulceration. Arterial pulsations good. Vibration sense normal. Reflexes equal and active. Movements of right leg normal.

Patient resents examination of left leg, the slightest movement giving her pain. The knee and ankle joints can be moved freely after some coaxing. Attempts to produce any movement at hip joint accompanied by excruciating pain. Percussion over greater trochanter of femur produces severe pain.

Clinical Laboratory

Urinalysis—Color turbid, straw. Reaction acid. Albumin, 0. Sugar, 0. Specific gravity, 1.023. Microscopic, 35-40 pus cells per L.P.F.

Blood count—Red cells, 4,850,000. Hemoglobin, 98%. White cells, 8,300. Polymorphs, 70%. Lymphocytes, 30%.

X-ray findings—A myelogram was done after consultation with an orthopedic surgeon who suggested the possibility of a prolapsed intervertebral disc.

A.P. and lateral films of lower dorsal and lumbar vertebrae. The fourth and fifth lumbar interspaces are narrowed, and slight hypertrophic calcification is noted about the margins of the last two lumbar bodies. Otherwise negative (Dr. F. G. Stuart).

The lumbar subarachnoid space was visualized by Pantopaque. No abnormalities were demonstrable. (Dr. F. G. Stuart).

A.P. films of pelvis and hips. There is a large circular area of bone destruction of irregular outline in the inter-trochanteric region of the left femur. This has the appearance of a metastatic tumor. There is evidence to suggest that the metastases is progressing down the shaft. Dr. F. G. Stuart).

Films of ribs and skull showed no abnormalities.

Cerebro-spinal fluid—Clear and colorless. No cells. No globulin. Total protein, 28 mgm. W.R. negative.

Blood Wasserman—Negative.

Urine for Bence-Jones protein—Negative.

Blood Chemistry—Blood phosphorus, 3.1 mgms. Blood calcium, 11.5 mgms. Serum acid phosphatase, 3 units. Serum alkaline phosphatase, 9.5 units. Serum proteins, total 6.3 grms. Albumin, 3.9 gms. Globulin, 2.4 gms. On March 2, 1947, the patient was awakened from her sleep by the sound of a glass dropping. She jerked forward in bed and felt a sudden severe

pain in the left hip. A.P. film of the left hip, March 3, 1947. Compared with examination of January 24, there is now evidence of a pathological fracture through the translucent zone in the upper femur. There is a very little deformity of the fragments. There has been no further extension of the osteolytic process (Dr. F. G. Stuart).

On March 6, 1947, a biopsy was taken from the upper end of the left femur. A spica cast was then applied to immobilize the left hip.

Report of biopsy tissue—Tissue consists of glandular acini filled with colloid material, at times dense and acidophilic. Most of colloid is thin and colorless. Tumor appears of low grade (grade ii) and is metastatic from thyroid.

Pre-operative Diagnosis

Carcinoma of thyroid with metastatic femur.

Indications for Operation

A biopsy from the upper end of the left femur revealed metastatic carcinoma, secondary from the thyroid. A small hard marble-sized nodule was palpable in the right lobe of the thyroid gland, which appeared to be fixed to the thyroid cartilage but was possibly resectable. There was no evidence of other metastases in addition to the one in the femur. Some reports in the literature describe recession of metastases following removal of the primary in the thyroid, such as often occurs with a hypernephroma. Literature on carcinoma of the thyroid with metastases is inconclusive, but apparently the best results are obtained with total thyroidectomy followed by irradiation of the neck and of the metastatic lesions.

Pre-operative Care

On January 30, 1947, the patient had been started on a course of deep X-ray therapy to the metastasis in the femur. Anterior (15 x 15 cms.), posterior (15 x 15 cms.) and lateral (10 x 10 cms.) ports were used. Two areas were treated daily using 400 Kv. P., 1 mm. Thoreus and 1 mm. Al filtration at a distance of 80 cms. The anterior and posterior areas received 2500 r each (measured at skin surface). The lateral area received 950 r.

No other special pre-operative care was deemed necessary as the patient was in good state of hydration and nutrition and had no evidence of thyrotoxicosis.

Detailed Description of Operative Technique and of Operative Findings

Position—Supine: encased in a body cast. Sand-bag was placed behind the shoulders so as to render the goiter prominent. A frame with screen adjusted to isolate the head and face. Skin painted with merthiolate. Draped.

Local Anaesthetic—About 50 cc. of 1% novocaine solution (without adrenalin) was first injected subcutaneously along the line of the proposed incision, then in radiating lines towards the upper poles and finally injected deeply in the region of the upper poles.

Incision—A transverse collar incision extending from the outer border of one sterno-mastoid muscle to a corresponding point on the opposite side was made. On the right side, the incision was extended along the anterior border of the sterno-mastoid for about 1 inch to give a more liberal exposure of the right thyroid lobe. The skin and platysma were completely divided. The upper flap consisting of the skin, superficial fascia and platysma was dissected upwards by means of gauze dissection and snipping here and there of fibrous bands with scissors, up to the notch in the thyroid cartilage. The lower skin edge was dissected in a similar manner in a downward direction for about half an inch. All small bleeders were ligated with 000 chromic catgut. The two skin flaps were now retracted by means of hook retractors. The deep cervical fascia covering the pre-tracheal muscles was picked up with 2 haemostats, one on each side of the midline, and divided in a vertical direction to the entire length of the exposure. The pre-cervical fascia along with the 3 strap muscles of the neck on the right side were divided transversely to the full transfixion and ligated. A thyroid seizing forceps was hooked into the body of the right lobe, and by gentle traction the lobe was partly dislocated from its bed and lifted into the wound. The middle thyroid vein was ligated close to its origin from the internal jugular vein. The inferior pole of the right lobe was now dislocated towards the opposite side and upwards; the sternomastoid was retracted to the right. By gentle blunt dissection with a hemostat the inferior thyroid artery was found coming from the carotid artery and doubly clamped and ligated with chromic catgut i. The gland was elevated and with fine hemostats working underneath the capsule of the gland the entire lobe was gently separated. The right recurrent laryngeal nerve was visualized and found to be adherent to the mass. It was badly torn during the operation, and could not be preserved. The medial part of the right lobe was firmly adherent to the thyroid cartilage. A portion of the cartilage was removed and during the process there was a slight perforation made into the trachea, resulting in a sucking noise. This was immediately closed with a fine pursestring suture. The gland was elevated still further and mobilized, and the superior thyroid vessels ligated high above the upper pole. The gland was then rotated to the left and the isthmus sharply dissected off the trachea, at the same time separating and dividing and ligating the suspensory ligament of the gland above. A thyroid seizing forceps was now hooked into the body of the left lobe, which was small and freely movable, and by gentle traction the entire lobe was dislocated from its bed and lifted into the wound. The middle thyroid vein was ligated close to its origin from the jugular vein,

the inferior thyroid artery and vein were ligated as on the right side. The gland was now rotated to the right and carefully dissected off by working underneath the capsule. The recurrent laryngeal nerve was visualized, gently dissected out, and left intact. The superior thyroid vessels were now doubly ligated with a chromic catgut i ligature above the pole, and the gland removed. The wound was now inspected for bleeding. The strap muscles on the right were sutured together by mattress sutures and then approximated in the midline by interrupted sutures. The deep cervical fascia was sutured with chromic catgut 000, interrupted. The skin was closed with a fine continuous over and over silk suture. No drain was used.

A thyroid dressing was applied.

At the end of the operation the anaesthetist visualized both vocal cords, and reported complete lack of movement on the right side, with normal movement on the left.

Anaesthetic

Pre-medication—Tuinal grs. iii h.s. and a.m. Morphine 1/6 and atropin 1/150 in a.m.

Condition of patient—Temperature 98.2°F. Pulse 84. Respiration 20. Blood pressure 150/86.

Agents—Cyclopropane and oxygen.

Technique—Closed—pharyngeal airway.

Stimulants—None.

Comments—Small perforation of trachea during the operation. No haemorrhage. No drains.

Gross and Microscopic Description of Tissues Removed

Pathological Tissue—March 25, 1947.

Tissue No. 119-20-21-22.

Thyroid: Two small nodular lobes, total weight 31 gms. Most of nodules are small, of pure colloid texture and obviously innocent. Small pea-sized, light yellow nodule present, all calcified. Largest nodule of small olive size, is firm, whitish and cellular looking, texture homogeneous.

Micro: of whitish, cellular looking nodules, grade ii adenocarcinoma; tumor shows few small areas of higher grade which was not observed in metastatic growth of femur. (Dr. Prendergast, Pathologist).

Progress Notes Including Post-operative Care During Stay in Hospital

March 25, 1947—Immediate post-operative course was very satisfactory. Highest point in temperature was 99.4°F. Pulse 90. Respiration 20. She reacted favorably; vomited once; complained of pain in the cardiac region during the first 24 hours.

March 27, 1947—Slightly restless. Coughing, and voice somewhat hoarse. On laryngoscopic examination the right vocal cord was fixed. Continuous steam inhalations given.

March 29, 1947—Coughing and expectorating

moderate amounts. Had good night. Stitches removed.

April 2, 1947—Comfortable. Voice slightly rasping.

April 6, 1947—Turned on the abdomen several times for the next week. Condition good.

April 10, 1947—Change of spical and removal of sutures from biopsy wound. A.P. film of the upper end of the left femur: Compared with the examination of March 3, 1947, the fragments of the fractured femur have been adducted and the distal fragment shifted medially at the fracture site. There is evidence to suggest that union is occurring. There is some further decalcification below the previously metastatic area. (Dr. F. G. Stuart).

April 18, 1947—Leg exercises.

April 25, 1947—A.P. film of the left hip. Compared with the examination of April 10, 1947, little if any change is noted in the appearance of the left femur. (Dr. F. G. Stuart).

May 8, 1947—Up in chair for half an hour. Post-operative irradiation of the thyroid was begun. Two ports (10 x 10 cms.) were used anteriorly directed at an angle of 30° to the sagittal plane, using 400 Kv. P., 1mm. Thoreus and 1 mm. Al. filtration at a distance of 80 cms. 1450 r (measured at skin surface) were administered to each area. Treatment was completed on June 18, 1947. (Dr. F. G. Stuart).

June 5, 1947—Removed spica.

June 10, 1947—Up in a walker for ten minutes.

June 18, 1947—Walking on crutches. A.P. film of the left hip (Lysholm technique). Compared to the examination of May 16, 1947, there is evidence to suggest some further filling in of the curetted area with new bone. There does not appear to be any further bone destruction. (Dr. F. G. Stuart).

June 19, 1947—Discharged from hospital.

Condition on Discharge

Patient completely free of pain; able to get about quite readily with crutches.

There was about 1½ inches of shortening in the left leg.

All movements were absolutely painless.

No tenderness.

Follow-up Notes Since Leaving Hospital

October 10, 1947—Patient presented at Tumor Clinic, St. Boniface Hospital. Able to walk. Free of pain. Walking with cane only. Left shoe built 1½ inches to overcome limp.

October 14, 1947—Re-admitted for X-ray. A.P. film of the upper half of the left femur. Compared with the examination of May 16, 1947, there has been considerable new bone formation in the rarefied bone below the greater trochanter. There has been no further extension of the malignant process. (Dr. F. G. Stuart).

June 14, 1948—Patient reported to the office in excellent spirits. Feels very pleased with her results. Can walk without crutches with only a very slight limp. Sleeps well. No complaints whatsoever, except that she has gained 12 lbs. Was placed on a low-calorie reducing diet. B.M.R., —22. Given thyroid extracts grs. ½ t. i. d. to be increased if necessary, within 2 or 3 weeks.

August 31, 1948—Patient feeling well. No pain. X-ray hip. Area of bone destruction previously noted is now completely filled in and appears solid.

July 16, 1949—Recurrence of pain in left hip. X-ray Hip. Considerable coxa vara. There is a zone of unsettled sclerosis 2 inches in diameter at the level of the lesser trochanter. A rarefied area ½ inch by ¾ inch is seen in the lateral portion of this.

September 7, 1949—X-ray hip—no significant change since examination of July, 1949. It was decided to try the effect of a course radioactive iodine on this malignancy. The patient was referred to Dr. J. P. Gemmell whose report follows:

On 16th September, 1949, a tracer dose (0.2 millicuries) was administered and a very slight amount of radioiodine was localized in the metastases. The failure of the metastases to pick up the radioiodine was attributed to the desiccated thyroid inhibiting the function of the metastases. The histology of the previously removed tumor strongly suggested that the tissue should collect radioiodine. The desiccated thyroid was discontinued and on Dec. 9th, 1949, a dose of 16.4 millicuries was given. Studies revealed that the metastases collected approximately five times as much radioiodine at this time as previously. Nevertheless, less than 1% of the dose was in the metastases. At this time the patient was myxoedmatous which indicated practically no functioning thyroid tissue. Further doses of 39.3 mc. on March 17th, 1950 and 48 mc. on July 20th, 1951, were administered with approximately similar results. The total dose administered was 104.4 mc. It was proposed to administer thyrotrophic hormone prior to the next dose in hopes of increasing the radioiodine uptake. Unfortunately a further pathological fracture occurred.

The failure of radioiodine therapy is explained by the histological appearance of the metastases in 1950. The metastases was almost entirely anaplastic and no longer closely resembled thyroid tissue. Failure of treatment should have been suggested by the failure of the metastases to function as shown by the appearance of myxoedema, and the slight increase in uptake of radioiodine. It is likely that this alteration in histological appearance could be attributed to the previous X-ray therapy. (J. P. Gemmell).

September 9, 1950—Patient fell while attempt-

ing to sit down. She felt severe pain in the left hip and was unable to walk. She was admitted to St. Boniface Hospital.

X-ray Hip—There is marked decalcification of the trochanteric area and upper end of the shaft and the neck of the left femur.

There has been a fracture through the neck and upper end of the shaft.

September 29, 1950—A disarticulation of the left leg at the hip joint was done by Dr. K. C. McGibbon. Recovery was satisfactory and the wound

healed well. It is of interest that the histologic pathology of the metastasis had shown a change from colloid-containing acini to a more cellular, anaplastic structure free of colloid. There was some invasion of soft tissues in the region of the growth.

May 3, 1951—Patient feels well. No evidence of activity of malignancy or of further metastases.

September 28, 1951—Patient still well. No complaints. Gets around with crutches. Having artificial limb made.

Book Reviews

Cancer As I See It is an exposition of the author's theory about the cause of cancer. He has attempted to show, step by step, the reasonableness of the germ-virus theory. He draws upon the observations and contributions of pioneer investigators and adds to these the results of his own reasoning and research.

So long as the riddle of cancer is unsolved every thoughtful hypothesis as to its cause is worthy of consideration because in anyone of these there may be that nucleus of fact which properly elaborated may result in expansion of knowledge and direction towards ultimate victory.

The book is of 100 pages and is indexed. Each of the seven chapters is preceded by a brief summary of what follows. The author is a member of the American Medical Association and is attached to the Illinois Masonic Hospital in Chicago.

Cancer As I See It, by Henery W. Abelman, M.D.. Philosophical Library, New York. \$2.75.

Technical Methods for the Technician is a compact encyclopedia of laboratory procedures. It covers the whole field of such procedures and is completely up-to-date.

Unlike most volumes of the sort the instructions are given in the fewest possible words. Throughout the book, for every test every procedure the same plan is followed: each step is set down clearly and briefly, each one is numbered and the numbers stand plainly below each other. Indented margins eliminate confusion. Whenever an illustration or a diagram is helpful there is one.

All the usual and many unusual technical procedures and tests are included so that the technician may have instructions for any of them. In the section on blood there is an abundance of colored illustrations and many diagrams, color photographs and diagrams of the same cells or

smears facing each other. The new nomenclature of red and white cells is given. The Papanicolaou method, all the accepted pregnancy tests, the technique of making and staining paraffin and frozen sections, and a variety of serological tests for syphilis are all included, and in each case with many helpful illustrations.

In addition there are tables of normals, formulae of solutions and reagents, a section on the mechanism use and care of the microscope, instructions on laboratory habits and duties, and, indeed, not only an answer to every question the technician is likely to ask but illustrations of much of the equipment he must use.

The book is divided into sections at the end of which is a series of questions which serve to check the readers knowledge and to impress upon him the salient points.

It is difficult to conceive of a volume more likely to earn the approval of those who work in laboratories or who teach clinical laboratory methods.

Technical Methods for the Technician (fourth edit.), by Anson Lee Brown, B.A., M.D., 784 pages, profusely illustrated in black and white, and color. Published by the Author, 41 S. Grant Ave., Columbus, Ohio. Price \$10.00.

Clinical Electrocardiography, by Francis F. Rosenbaum, M.D., Assistant Clinical Professor of Medicine, Marquette University School of Medicine; Staff, Milwaukee County Hospital; Associate Staff, Columbia Hospital; Adjunct Staff, Milwaukee Children's Hospital; Cardiac Consultant and Attendant, Cardiac Clinic, Milwaukee Children's Hospital, Milwaukee, Wisconsin.

Reprint from Oxford Loose-Leaf Medicine with the same page numbers as in that work. 152 pages. Oxford University Press, N.Y. Price \$5.50.

Medico-Literary

J. C. Hossack, M.D., C.M. (Man.)

Poison in the Palace

Charles then took a wax candle and went into the nurse's apartment. She was not there, and he passed on into his armoury; but as he went forward a violent illness, such as he had already experienced, suddenly seized him. He suffered as if his entrails were perforated with a hot iron; an unquenchable thirst consumed him, and seeing a cup of milk on the table, he swallowed it at a draught. He then felt somewhat easier, and entered the armoury. To his great astonishment, Actaeon did not come to meet him. Had he been shut up? In that case he would have known that his master had returned from hunting, and would have howled to rejoin him.

Charles called, whistled; the animal did not appear. He advanced four paces, and as the light of the wax candle threw its beams to a corner of the cabinet, he saw a large mass extended on the floor. "Holloa, Actaeon, holloa," said he, whistling again.

The dog did not move. Charles hastened forward and touched him; the poor brute was stiff and cold. From his throat contracted by pain, several drops of bile had fallen, mingled with a foamy and bloody slaver. The dog had found in the cabinet an old cap of his master's, and had died with his head resting on something that represented a friend.

At this spectacle, which made him forget his own sufferings, and restored to him all his energy, rage boiled in Charles's veins. He would have cried out, but encompassed in their greatness as they are, kings are not free to yield to that first impulse in passion or in danger. He reflected that there might be some treason here, and was silent.

Charles knelt before his dog, and examined the dead carcass with an experienced eye. The eye was glassy, the tongue red, and covered with pustules; it was a strange disease, and made Charles shudder. He put on his gloves, opened the livid lips of the dog to examine the teeth, and remarked in the interstices some white-looking fragments clinging about the points of his sharp teeth. He took these fragments out, and at once saw that they were paper; near where the paper was the inflammation was more violent, the gums were more swollen, and the skin appeared as if eaten by vitriol.

Charles looked around him attentively. On the carpet were lying several pieces of paper similar to that which he had already found in the dog's throat; one of the bits, larger than the others, presented the marks of an engraving on wood. Charles's hair stood erect on his head; he recognized a fragment of the engraving which repre-

sented a gentleman hawking, and it was that which Actaeon had torn out of his book of venery.

"Ah," said he, turning pale, "the book was poisoned!" Then, suddenly calling up his recollections, "Thousand devils! I touched every page with my finger; and at every page I raised my finger to my lips to moisten it. These faintings—these pains—these vomitings! I am a dead man!" He remained for an instant motionless under the weight of this frightful idea; then, raising himself with a hoarse groan, he went hastily towards the door. "Let some one go instantly and with all despatch," he cried, "to Maître René, and bring him here in ten minutes. Let one of you mount a horse and lead another one, that you may return sooner. If Maître Ambroise Paré arrives, desire him to wait."

A guard started off on the run to obey the king's commands.

"Ah," muttered Charles, "if I put everybody to the torture, I will learn who gave this book to Henriot!" and with the perspiration on his brow, his hands clinched, his breast heaving, Charles remained with his eyes fixed on the body of his dead dog. Ten minutes afterwards the Florentine rapped timidly and with some uneasiness at the king's door. There are certain consciences to which the sky is never clear.

"Enter!" said Charles.

The perfumer appeared. Charles went towards him with an imperious air and compressed lip.

"Your Majesty desired to see me," said René, trembling.

"You are a skilful chemist, are you not?"

"Sir—"

"And know all that the most skilful doctors know!"

"Your Majesty is pleased to flatter me."

"No, my mother tells me so; and, besides, I have confidence in you, and would rather consult you than any one else. Look!" he continued, pointing to the carcass of the dead dog; "I beg you to look at that animal's mouth, and tell me of what death he has died."

While René, with a wax candle in his hand, was stooping down to the ground, as much to hide his emotion as to obey the king, Charles, standing up, with his eyes fixed on him, awaited with a feverish expectation easily to be imagined the reply which would be his sentence of death or his assurance of safety.

René drew a kind of scalpel from his pocket, opened it, and with the point detached from the dog's mouth the morsels of paper adhering to the gums, looking long and attentively at the bile and blood exuding from the sore spots.

"Sire," he said in a tremulous voice, "here are very sad symptoms."

Charles felt an icy shudder run through his veins, and to his very heart. "Yes," he exclaimed: "the dog has been poisoned, has he not?"

"I fear so, Sire."

"And with what sort of poison?"

"I think a mineral poison."

"Can you ascertain to a certainty whether or not he has been poisoned?"

"Yes, on opening and examining the stomach."

"Open it, then; I wish the matter to be settled beyond doubt."

"I must call some one to assist me."

"I will assist you," said Charles. "If he has been poisoned, what symptoms shall we find?"

"Red blotches and herborisations in the stomach."

"Come, then, to work!"

René, with one stroke of the scalpel, opened the hound's body, while Charles, with one knee on the ground, held the light with a clinched and convulsive hand.

"See, Sire," said René; "see, here are evident traces. Here are the red blotches I mentioned; and these veins, turgid with blood, resembling the roots of certain plants, are what I meant by herborisations. I find here every symptom I anticipated."

So the dog was poisoned?"

"Unquestionably, Sire."

"With mineral poison?"

"According to every appearance."

"And what would be a man's symptoms who by accident had swallowed such poison?"

"Great pains in the head, a feeling of burning in the stomach, as if he had swallowed hot coals, pains in the bowels, and vomiting."

"Would he be thirsty?" asked Charles.

"Parchingly thirsty."

"'Tis so, then; 'tis so, then," muttered the king.

"Sire, I search in vain for the object of all these inquiries."

"Why search for it? You have no need to know. Only answer my questions."

"Let your Majesty question me."

"What is the antidote to administer to a man who had swallowed the same substance as my dog?"

René reflected an instant. "There are many mineral poisons," he replied; "and I should like to know precisely to what poison the inquiry relates. Has your Majesty any idea of the mode in which the poison was conveyed to the dog?"

"Yes," said Charles; "he has eaten the leaf of a book."

"The leaf of a book?"

"Yes."

"And has your Majesty that book?"

"Here it is," was Charles's answer, taking the hunting-book from the shelf where he had placed it, and handing it to René. René gave a start of surprise, which did not escape the king's notice.

"He has eaten a leaf of this book?" stammered René.

"Yes, this one;" and Charles pointed out the torn leaf.

"Allow me to tear out another, Sire."

"Do so."

René tore out a leaf and held it to the wax candle. When it was lighted a strong smell of garlic diffused itself through the apartment. . . .

At this moment Ambroise Paré entered by the opposite door. "Who," he said, "has been burning arsenic?"

Dumas-Le Reine Margot

Income Tax Information

Information Has Been Received That: Expenses Claimed by a Partner

Income Tax Department practice for dealing with expenses incurred by a partner to earn his share of the partnership profits where, by an agreement or understanding between the partners, it is provided that each partner will pay such expenses personally instead of charging them to the partnership accounts, HAS NOW BEEN REVISED:

A partner will be permitted to deduct any proper and reasonable expense incurred by him

to earn his share of the partnership income even if such expense has not been shown in the partnership accounts in determining its profits. However, as in the case of a proprietorship, the expenses claimed may be scrutinized to ensure that they are properly allowable.

This will apply—

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- (b) to outstanding appeals, and
- (c) to applications for adjustments made by the taxpayer within the time limit provided by Section 52 (1) of the Act.



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Collectivism and the Practice of Medicine

William B. Hildebrand, M.D.

Chairman, Board of Directors, American Academy of
General Practice
Menasha, Wisconsin

From 20,000 General Practitioners in the United States representing the American Academy of General Practice, across 3,000 miles of border where neither land mines, barbed wire nor ruthless iron-helmeted sentries stand with fixed bayonets to mar the beauties of nature, to our fellow general practitioners in Manitoba, I bring cordial and hearty greetings. As I flew across the border today, enjoying the breath taking panorama of woods, lakes and fields, I thanked God that in our part of the world two great nations can flourish side by side in harmony, where differences are settled over a council table rather than by bazookas or machine guns and co-operation exists, rather than dark suspicion and mutual distrust. If the relationships now enjoyed by the Dominion of Canada and the United States could be emulated and put to use by other countries of the world, the tremendous energy produced by the splitting of the atom could be used in healing malignant diseases, to diagnose hidden maladies, to produce electricity and industrial power rather than channelled into a mad rush between countries, each seeing how she can out do the other in producing deadly weapons designed to destroy the last vestiges of our present day civilization.

Since the early part of the present century in the short span of the lives of the youngest present here tonight, something has happened to the world. Since you and I learned how to spell, read and use the English language, new words and phrases have crept into common use—"socialism," "communism," "collectivism," "social security," "five-percenters," "special interests," "reactionaries," "sonic barrier," "political action committee," "concentration camps," "displaced persons," "fascism," "marxism," "nazi" and "atom bomb," as well as many others have taken their place in everyday conversation symbolic of changing attitudes and philosophies of the world's people. These changing attitudes and philosophies are reaching into the lives of every individual, into every segment of the population of the world, boring into our liberty loving lives with venom more deadly than that of the cobra, destined to destroy the freedom of countries as well as of individuals, replacing it with totalitarian ideas.

In a free society such as yours and mine, each man, woman and child is privileged and expected to assume the prerogative of self-determination, and has the right to be master of his own life and destiny. This privilege today is threatened all over the world and in many nations has been lost and has totally disappeared. The God-given right of a man to say what he wants to say, when and where he wants to say it, his right to follow his chosen work as he sees fit, to cast his vote at the polls as his conscience dictates in being challenged by an insidious toxic paralysis known as "collectivism."

The word "collectivism" cannot be found in any dictionary that I have seen; however, it may be defined as a way of thinking which embraces the ethically indefensible theory that individuals are entitled to things that they have not earned, and the unsound political doctrine that society owes every citizen something, regardless of whether or not that citizen repays society by doing his just share of the world's work. It carries the implication that a man must be told how and what to think and that his government must determine what is good for him rather than a man saying what is good for the government. Although this new philosophy reaches into the astrocytes, the motor cortex and the myocardia of every vocation and profession, it is specifically the practice of medicine with which we are concerned tonight.

Primitive man licked his wounds and spat saliva on them. Kerosene and sugar used to be standard remedies for coughs. My school mates wore a foul smelling piece of material called Asafoetida to ward off disease, tied around their necks on strings. A cowdung poultice was thought to be effective in wound healing. Bleeding was a standard procedure in all serious illnesses. These practices have remained in common use in the medical world until comparatively recently.

As opposed to this type of therapy based on witchery, quackery and wishful thinking, let me illustrate what the present status of medicine is in my country and what it has done for the average individual. May I quote from the Inaugural Address of Doctor John W. Cline at his installation as President of the American Medical Association in June, 1951:

"Since the turn of the century, almost twenty years have been added to the life span of the American people. The general death rate during the same period has been cut almost in half. This represents the saving of more than one million American lives every year.

*Presented at the Annual Meeting of the General Practitioners' Association, Winnipeg, October 10th, 1951.

"Our population has doubled since 1900, but the population—sixty-five years of age and older—has quadrupled. This results from saving the lives of infants, children and young adults.

"An American mother now has better than 999 chances out of 1,000 to come through childbirth safely. This is the best record in our history and, on a comparable basis, the best in the world.

"In the ten years between 1940 and 1950, infant mortality was cut 38 per cent. At the present rate of progress the record of the United States should be shortly, if not already, the best in the world.

"A baby born today has more than 20 per cent greater chance of reaching maturity and almost 45 per cent greater chance of achieving the age of fifty than had a baby born in 1900. At the same time, he faces only about half the hazard of becoming an orphan before reaching maturity."

Although specific data is not available to me, I have been informed by reliable sources that the Dominion of Canada has practically duplicated these remarkable achievements in medicine. I hasten to state and doubly emphasize the fact that this service to mankind has been developed as the result of private enterprise and individual initiative under democratic freedom. The opportunity to meet the dual challenge of disease and death has been accepted by men and women of medicine, using the weapons of truth, science and skill. When Cushing removed a brain tumor, no Commissar was in the surgical amphitheatre. When the great Sir William Osler made his medical rounds, both in England and the United States, he did so without having to consult the manual of procedure as laid down by the Ministry of Health. When a general practitioner answers a midnight call from a patient in our countries, he does not have to look on the panel to determine whether or not the patient is eligible. The scientific and economic framework of modern medicine has been welded together under the blue skies of a free society. That freedom, along with all other freedoms, must be preserved and perpetuated.

There are in the world today those probably well-meaning, but idealistic, power mad, little men who would substitute this free system that has given the world its healthiest era for one designed to shackle the advancement of science, stifle individual initiative, replace the kindly hand of the family doctor by the iron fist of the Bureaucrat, by forcing upon us a collectivist experiment called State Medicine, which in the light of experience in other countries who have it, has resulted in more medical care of an inferior quality, with much greater expense to the people involved.

Because of the blood relationship, as well as the political and economic ties existing between the Dominion of Canada, England and the United States, I hesitate to draw upon the experience of

our mutual mother country in order to evaluate and describe what can and might happen in either Canada or the United States. However, as men of science, we are men of truth. Let us pull our heads from the sand and squarely face the facts. These facts—cold, stark and brutal as they are, are revealed in a personal communication from a well-respected, eminent London physician, a member of the Royal College of Surgeons, who comments upon England's system of medical care as follows:

A. The Effect of England's National Health Service Upon the Patient

When any system of medical care is evaluated, the welfare of the patient is the first consideration. The public in England has been led by the Socialistic tub thumpers to suppose that with the coming of the National Health Service a medical Utopia would dawn for them. In point of fact, the ordinary working-class patient is less well off than he was before the scheme started. The National Health Service has brought no more hospital beds, no more doctors, no more nurses; in fact, no more facilities of any kind into service, with the result that there are now infinitely more people competing for the same amount of facilities due to the fact that those who formerly paid for their medical care now seek it under the National Health Service. Before the advent of the National Health Service a referred patient could get an appointment to any consultant or clinic within a few days—now it takes a month or six weeks. Before the start of the service, all ward beds were devoted to the lowest income group, but now these people share the same number of hospital beds with people who could and did and can now afford private accommodations.

A similar thing happens in general practice. The ordinary family doctor has queues outside his office. Most of them are waiting for his signature on a form or else with some trivial ailment for which they would formerly have treated themselves quite effectively. A certain proportion of those patients in the line will have some genuine and perhaps serious complaint, but the doctor will find it either very difficult or impossible to give the necessary time to the patient. After all, the general practitioner in England averages three minutes per patient and very little can be done in that period of time.

The Health Scheme is being grossly abused by the sharper members of the public using it. Pawnbrokers shops are said to be full of spectacles obtained from the State. Dentistry has become an absolute racket. The Ministry of Health gave a solemn promise that any member of the public could use all or any part of the Health Service and then proceeded to deny the right of a patient who preferred to pay for his medical care, as he

previously did, to procure any medicine under the Scheme. On the other hand, any foreigner visiting England has a right to all the benefits. The British Medical Journal recently reported the case of a foreigner who visited England and returned to his own country with two sets of spectacles and a set of false teeth paid for by the British taxpayers.

What does the patient himself say about the Scheme? Listen to the voice of a skilled leather goods worker. "I was for the health programme," he said. "Now, from experience, I am very much against it. It sounded good and seemed right that there should be no money barrier between a person who is ill and the medical care that he needed. But when the money barrier was taken away, we found in its place a human barrier—a road block of people jamming the doctors offices and hospitals. Many people are abusing the system. Unless you wait until you are desperately ill, and an emergency exists, this human barrier cannot be pushed aside. And when you finally do get through, you find something that isn't nearly as good as it used to be." "Further," he added, "there are heavy taxes to pay the bills. I do not pay the doctor anymore, but believe me, I pay."

B. The Effect of National Health Service Upon the Consultant

I quote verbatim from the learned doctor's communication:

"I have yet to meet a Consultant who expresses any satisfaction with the Scheme. We have become a body of exasperated, frustrated, embittered men. Before 1948 we all used to enjoy our jobs—now, we just regard our work merely as a means of keeping the wolf from the door and, for some, even that is not possible. Countless forms have to be completed; our actions are liable to be questioned by local demagogues from the Trade Union ranks; a consultant is liable to be 'drafted' to a new neighbourhood and he may be denied the right to practice a particular specialty in which he has already displayed his prowess. There is no doubt whatever that the Minister is doing all in his power to abolish private practice by making it as difficult as possible for the patient to afford it and by denying the consultants the opportunity of practicing it. His aim is to squeeze us all into the whole time service—to make us wholtime salaried civil servants. The tragedy is that he may succeed in this with large numbers of the consultants—so many of them yield to his pressure either through economic necessity or lack of moral courage. There are, of course, a few shining examples who have put their principles before everything—I know of men of noble character who have sacrificed careers of brilliant promise and have given up the practice of medicine and become small farmers and such-like.

"One man I know of found more satisfaction in running a fried-fish shop. Many of the younger

men are emigrating and they, perhaps, are our best types—so that our country is in danger of becoming intellectually impoverished. Some of us are not taking all this lying down. I myself seize every conceivable opportunity of exposing the absurdities and injustices of the situation: At every possible pretext I carry on a long and acrimonious correspondence with the medical bureaucrats that have been placed in authority over me and, to give them their due, I have met with a certain amount of success in persuading them to see reason. But it is a wearisome business and one looks back with yearning to the days when one was master of one's own destiny and captain of one's own soul.

"All sorts of ridiculous 'regulations' have been issued by the Minister. One of them concerns the scale of fees that a surgeon may charge for operations on private patients in the private ward of a hospital. An attempt has been made to classify all operations into three categories—major, intermediate and minor—and a schedule of these categories has been drawn up. This schedule is so fantastically absurd that one is tempted to think it might have been drawn up by a hospital porter. For instance, the aspiration of a cerebral cyst is called a minor operation and is put in the same category as the removal of a sebaceous cyst; acute appendicitis is a major operation while adenoma of the thyroid is an intermediate one. The more stout-hearted of us just ignore the whole thing but we shall, I expect, be called to account by the bureaucrats one of these days and that will be our opportunity to tell them, as man to man, what we really think of them. It is this interference with one's freedom that one resents most of all—that, and the fact that the interferences are inflicted upon us because they (our Socialist Masters) are unwilling to trust the members of a learned and noble profession to behave decently."

C. The Effect of the National Health Service Upon the General Practitioner

Much of the foregoing relative to the Consultant is applicable to the General Practitioner and vice versa. The General Practitioner has lost his joy and interest in his work and has become not much more than a sorting clerk. Many face economic ruin, particularly in the rural areas where incomes are, in many instances, less than half of what they were before the Scheme started. As is to be expected under any collectivist scheme, there is no reward for skill, energy or enterprise. Payment is made on a flat rate per person, and the dullard and laggard get the same pay rate as the prodigy. With no exceptions, General Practitioners are unhappy men. Pride in their profession is waning and none are encouraging their sons to follow in their footsteps as happened so often in the past. In the old days the essential characteristic of a man who went into medicine was that he was an

individualist who could stand on his own two feet and was ready to rise and fall by the success or failure of his own endeavors. He expected, and got, his due reward for what he put into the job, answerable only to his patients and his conscience. But now, the State has become his master and he can no longer plow his own furrow. This change in concept will result in an entirely different type of man going into medicine. The future physicians will be small-minded little men with civil service mentalities and his main concerns will be to keep on the right side of his administrative superiors, the watching of the clock and the passing of the buck.

D. General Observations on the National Health Service

Any indictment of the National Health Service must of necessity be an indictment of Socialism and its dismal doctrines. England has had nearly six years of Socialism and it has brought the country to the brink of ruin from every point of view—spiritually, morally and economically. The average intelligent, decent, hard-working citizen has been debauched and emasculated. Formerly, he was willing to pay for what he had and to have only what he paid for. Now, he looks to the all-powerful State to provide him with all his needs, and he has been propagandized into believing that he ought not have to work for the things he gets. The possession of low cunning has become more important and more profitable than high character. A slick but unscrupulous intelligence will take a man to the top under Socialism more certainly and more easily than honest toil and dogged perseverance. The ordinary man on the street seems incapable of appreciating the obvious truth that Socialism is but one of the steps in and inevitably leads to Communism, and Collectivism. Indeed the obvious conclusion of Socialism is Communism. The man on the street also seems incapable of realizing that Nationalization and class hatred, which Socialists spend their time preaching and practicing, are the two main supporting props of Communism.

Any statement that you have heard that there has been a change of attitude towards the National Health Service by the medical profession of England is a deliberate falsehood and has probably been issued by the propaganda department of Left Wing groups. If your government should seek to inflict upon your country a National Health Service even remotely resembling theirs, then I would repeat to you the famous advice of Mr. Punch to those about to be married—"Don't."

This, gentlemen, comes to you from a fellow practitioner in England and these facts are presented—not to criticize—but for the purpose of learning what to avoid in planning the future health programmes for the people of our continent.

What then, one may ask, is the alternative? It does not seem right that there should be a financial barrier between a patient and the medical care that he needs, but under a Capitalistic system such as we have in Canada, the United States and the rest of the free world, there is and must be. The medical profession must bear its share of society's indictment against present day medical care. In many instances unnecessary surgery is done, fees by specialists are far too high and it becomes the practice of many unscrupulous physicians to charge "what the traffic will bear." These unethical practices are the dirty linen of the medical profession and we should discipline our own ranks. Although not the fault of the doctor, many new medicines and techniques used in the diagnosis and treatment of disease are very costly. To illustrate how medical progress increases medical costs, consider the following: Twenty-five years ago when the old family doctor went to see patients with pneumonia he signed 33 death certificates for every 100 patients seen. For the remaining 67 all he could do was to tell them when the day of crisis would occur and that if the patient survived the crisis he would be ill so many days before he could get up. The patient could not return to his work for weeks. Consider, if you will, in addition to the terrible toll of lives, the incalculable amount of man-hours lost in production caused by the prolonged convalescence which the doctor could not change. It cost the patient two or three dollars and five dollars if the doctor stayed all night. A small sum indeed, but the cost in lives and man hours and production was colossal.

Contrast this with the present day physician, young or old, called to a home and making a diagnosis of pneumonia. The patient is hurried to a hospital in an ambulance, oxygen is started, he possibly may have a blood transfusion and one of the newer Anti-Biotics or Sulfonamides is started. The doctor may spend fifty to one hundred dollars of his patient's money within forty-eight hours, but what of it? The modern physician only signs death certificates for about one of every one hundred pneumonia cases. The man-hours lost have been largely eliminated. About the fourth day, on his hospital rounds, the doctor is usually greeted with "Hey, Doc, when are you going to let me out of here?" When the books are finally balanced, it is certainly true that the modern physician has spent much more of his patient's money than he did fifty years ago, but the money spent is for a hospital room, oxygen, anaesthesia, blood, penicillin, sulfonamides, terramycin, aureomycin, neomycin, chloromycetin, ACTH and so on ad infinitum, all of which represent advances in medicine and surgery. But the public must remember one thing—that all of these advances in medicine have been made available through the doctor to the patient and that these charges have

nothing to do with the charges made by the physician himself for his services, and should not be used as a critical indictment against the physician himself and the medical profession which he represents.

By the way of self-condemnation and criticism, may I state that the medical profession is not without blame. We have brought forth no solution and given no advice as to the proper way to approach the problem of increasing medical costs. We have sat smugly and idly by with neither a public relations programme or at best a very poor one, condemning and criticising every plan proposed to help society pay medical costs without so much as advancing any plan of our own. Who is better qualified to propose and administer a medical care plan than a physician?

Society has forced our hand. No longer can a physician hide behind what he calls a busy practice to avoid civic responsibility. What can society and the medical profession do to help our patient in financial need and what can the patient do to help himself?

If we are to avoid having thrust upon us a nationalized, regimented, collectivist system, we must have some constructive proposal. That proposal lies in the sponsoring and fostering of and participating in voluntary prepaid medical care plans to help defray the cost of catastrophic illnesses. These plans must be constructed within the framework of private enterprise, free of bureaucratic interference. Both the Canadian and American Medical Associations are promoting the development of sound voluntary health plans to ease the burden of severe illnesses. As a result of this effort, in co-operation with other groups of citizens such as hospitals, labor, professions, industrial plants, as well as the individual, over seventy-two million people—or nearly one-half the population of the United States—are protected by one or another type of health insurance against the financial strain imposed upon the head of the family when sudden severe illness strikes.

This is, and should be, medicine's answer to collectivism. For the cost of a package of cigarettes per day, a very reasonable hospitalization and surgical policy can be obtained which will cover a man, his wife and children against severe illness, hospitalization and necessary surgery. By personally crusading and disseminating such informa-

tion in our offices, among our friends and in social groups, we can strike back at the hooded menace of State control that hovers so close to us.

I have great faith in men of medicine. The profession must accept society's challenge—not only because it strikes at the roots of our academic and economic freedom, but because medical collectivism or State medicine is but one of the many facets of a master programme designed to swallow up the liberty that is the right of all men. We must be alert to oppose vigorously any paternalistic scheme that would threaten the liberty of any member of our society, be he black, white, yellow or red—Catholic, Protestant or Jew.

Lawrence Abel, M.S., F.R.C.S., in an article, "Pitfalls of Planning" appearing in the British Medical Journal (Supplement) of August 4, 1951, quotes the following words of Abraham Lincoln: You cannot bring about prosperity by discouraging thrift.

You cannot strengthen the weak by weakening the strong.

You cannot help the wage-earner by pulling down the wage-payer.

You cannot further the brotherhood of man by encouraging class hatred.

You cannot help the poor by destroying the rich. You cannot establish sound security on borrowed money.

You cannot keep out of trouble by spending more than you earn.

You cannot build character and courage by taking away men's initiative and independence.

You cannot help men permanently by doing for them what they should do for themselves.

Our two nations have been born and bred of great people and illustrious ancestors. Only under free enterprise can we continue to be great. As citizens first and physicians second, let us pledge ourselves to fight for the retention and perpetuation of that system. The people of another great nation went down because they voted for a promise made by their leader, similar to promises being made in the world today. He said, "We shall banish want, we shall banish fear, we shall banish disease. The essence of national socialism is human welfare. National socialism is the revolution of the common man. National socialism means a new day at home and a better world abroad." Those were the words of Adolph Hitler!

"The General Practitioners of Manutopia"

Presidential Address

Melville M. Brown, M.D.

We, the General Practitioners of Manitoba, have that for which General Practitioners of other parts of the world are striving. I refer to the privilege of caring for our charges in the home, and in the hospital. We do major surgery, major obstetrical procedures and major intricate medical treatments. We do not dissociate ourselves from our patients at the hospital door, as is the case in Great Britain, and in most other parts of Canada and the United States.

In other words, in the minds of General Practitioners elsewhere, we in Manitoba have Utopia. Do not forget that word "Manutopia." Recall it when you feel disgruntled.

What effect has this state of affairs on the medical care of the people of this province? Few will deny that the G.P. of Manitoba is better equipped with a combination of medical knowledge, skill and experience than our confreres in other parts. We therefore must provide a higher standard of general medical care than that existing in areas where general practitioners are denied hospital privileges.

For this we completely and whole heartedly credit the specialists. We are continually, day after day, enjoying a post-graduate course, in our unrestricted intimate contact at hospitals, with men who have, at a sacrifice, spent extra years obtaining special knowledge of special branches of medicine. In Winnipeg, gentlemen, as in no other place, these specialists have willingly and without charge, passed on to us this knowledge for which they spent post-graduate years during which time they sacrificed the earnings of a practice.

This would be the ultimate in medical training, that suitable candidates, having completed expert post-graduate courses, could return and impart their extra knowledge to the general practitioner at large.

Having expounded to you the reasons for which we should give thanks, let us now examine the means whereby we can maintain and justify this Utopia.

Firstly, give credit where credit is due. Without the co-operation of the specialist group we could not have our present knowledge and skill.

Secondly, do not falter in our allegiance to our primary reason for existence, the honest care of the patient. This means specifically the avoidance of any attempted completion of treatment for which we have not the skill and experience necessary to insure the optimum prognosis.

We are unfair to the patient, to ourselves, and to the medical profession when we hesitate or fail to ask for expert assistance in times of difficulty.

Do any of us lay claim to complete knowledge? Of course not! Why do we then, all too often, feel reluctant or ashamed to admit that, having started treatment, we must call on the aid of a specialist?

I am certain that if the specialist group felt that no patient's welfare would be jeopardized through the failure of the G.P. to call for assistance in times of doubt or difficulty, most of our restrictions would quickly be removed, and co-operation would be unlimited. Unhesitant request for expert advice or assistance is our most adequate way of repaying the specialists for the benefits we have received.

Thirdly, we must constantly and with determination, continue to improve our knowledge and skill, improving our standards to the point where none would care or dare to throw obstacles or restrictions of practice in our path. Members of specialized branches of medicine have standards to maintain, as reflected in their post-graduate degrees. Is it unreasonable that we, the General Practitioners, should require certain standards also? It is the most satisfactory method of limiting abuse in practice.

Probably there are many other requisites to the maintaining of our "Manutopia," but by following those mentioned above, we would be off to an excellent start.

We hear a great deal about "closed" hospitals in the various parts of the world. Certainly the hospitals in the British Isles are an outstanding example of this state. And how has it affected medical practice and the medical profession in that Country? Let me quote Dr. D. G. Anderson, Secretary, Council on Medical Education and Hospitals, American Medical Association.

"From all the reports the role of the General Practitioner in England today is very definitely a negative one. He has no hospital privileges, no time or opportunity for careful office practice and no incentive to improve himself. It is said that he is demoralized and since the general practitioners comprise some 75% of the medical profession, this must mean that the medical profession itself is demoralized. While the situation may be corrected in time, there is a real danger that the quality of medical care will be seriously and permanently lowered."

And how goes the battle in the United States? It is not a battle. It appears there, that the whole medical profession is pulling as a team, towards the proper goal—that of providing the best care for the patient. The special report of the Council on Medical Education and Hospitals to the House of Delegates of the American Medical Association, in June, 1947, clarified the Association's views with respect to hospital privileges for general practitioners. "Resolved that hospitals should be

encouraged to establish general practitioner services. Appointments to a general practice section shall be made by the hospital authorities on the merits and training of the physician. Such a general practice section shall not per se prevent approval of a hospital for the training of internes and residents. The criterion of whether a physician may be a member of a hospital staff should not be dependent upon certification by the specialty boards or membership in special boards or membership in special societies."

I have attempted to show how fortunate we are in "Manutopia." Our hospitals are open. In fact, I am given to understand that one of our teaching hospitals is willing and ready to set up a department of General Practice, as has been and is being done in the States. If this comes to pass, do your share when asked. Don't let the General Practitioner's Association down. Let's live up to the motto "What we have, we hold."

May I, at this time thank you all for the very great honor of permitting me to act as your President. As long as you have an active Council you have an army in reserve. The members of the Executive Council this year have been wonderful.

I am certain that whoever you choose from the slate of nominations for the coming year, you will have a very excellent Council.

General Practitioners' Association Annual Meeting Report

Annual Business Meeting, October 10, 1951, 8.30 p.m., in the Assembly Hall, Fort Garry Hotel. Dr. M. M. Brown, President, in the chair. Forty-five members were present.

Report of the Treasurer

Dr. Keenberg stated that we had a bank balance of \$954.15 and we have already paid out \$900.00 in scholarships.

Report of the Membership Committee

Dr. Edward showed membership for 1951 as 151 members, an increase of 14% over 1910.

Report of the Hospital Committee

Dr. McKenty: In rural Manitoba the number of hospital beds has increased in excess of 100 in the last year. Projected increases are even more encouraging. There is the 350 or greater addition to the St. Boniface and the new Children's Hospital, which is still in the blueprint stage, although a great deal of the money for it has been collected or pledged.

Indeed Winnipeg is in a much better state than many of the other cities of Canada. Vancouver, for instance, with 25% or more greater population, has 2,070 less actual hospital beds than Winnipeg.

Report of Scientific and Educational Committee

Dr. Bachynski: The Scientific and Educational Committee had no occasion to meet during the past year. Your Committee was responsible for

bringing Dr. W. B. Hildebrand, Chairman of the Board of Directors, A.A.G.P., as guest speaker at our annual dinner.

Report of Nominating Committee

Dr. Martin read the list of nominations and the results of balloting were: President, Dr. J. McKenty; First Vice-President, Dr. V. Bachynski; Second Vice-President, Dr. W. J. Boyd; Secretary, Dr. J. F. Edward; Corresponding Secretary, Dr. G. Hamilton; Treasurer, Dr. S. Malkin; Executive, Dr. B. Flett, Dr. F. L. Jamieson, Dr. L. J. Mongeon, Dr. E. Vann.

Manitoba Medical Service

Dr. J. C. MacMaster

I. Subscribers' Standard Contract for 1952—Premium Adjustments.

The Committee for drafting the 1952 premium rates and contract benefits, headed by S. Freedman, Esq., K.C., began its studies early in summer and closed its session on 31st October, 1951, with the adoption by the Board of Trustees of several recommendations.

As subscribers' contracts are now on a calendar year basis, the adjusted premiums will apply to all contract renewals and acceptances on and after 1st January, 1952.

Pamphlets with the appropriate alterations are expected from the printers in a few days and supplies will also be available for the dispenser units in the offices of medical members.

The adjustments are mainly "upwards" because of a heavier incidence of services, higher cost per service and the need to anticipate the provision of new benefits.

Sales resistance must be expected and steps are planned to minimize this.

The approved rates may be set out in tabular form as follows:

Category of Subscribers

	Plan A Premium Dollars per month	Plan B Premium Dollars per month
Group Subscribers:		
Single person	1.25	2.50
Man and wife	2.50	5.00
Man, Wife, Children	3.00	6.00
	"Limited"	"Wider"
Non-group Subscribers:	Plan	Plan
Single person	1.75	3.50
Man and Wife	3.50	7.00
Man, Wife, Children	3.50	7.00

II. A New Contract—Coverage for dependents of personnel in the Armed Services.

The need for a special contract for this deserving group has been pressing for some time, and we are happy to report the Board's adoption of recommendations of the 1952 Committee.

The benefits offered are those of the group A and B plans, and signs indicate that the provision of this contract has been warmly approved in the right quarters.

The coverage is for the wives and children of the serving men, and the approved rates are:

	Plan A Premium Dollars per Month	Plan B Premium Dollars per Month
Dependents:		
Wife	1.25	2.50
Wife, Children	1.75	4.25

Contracts will be effective on 1st January, 1952, and existing contracts of the group type may be converted to the service man's family type on application.

Negotiations are under way to have premiums made on a pay-assignment basis.

As this type of contract may not receive the publicity that it deserves, medical members could confer a boon on eligible dependents by drawing attention to the opportunity offered for coverage.

III. Minims

Dr. P. H. McNulty, Chairman of M.M.S., will address the delegates at the Annual Session of the Union of Manitoba Municipalities, on 28th November, 1951, in the Auditorium, Winnipeg. The title of his address is not yet available. . . . The Board's resolution, to invite the M.M.A. Executive Committee to dinner, was sponsored by the lay members, and everything points to an important and happy occasion. . . . A well deserved tribute to the lay members of the Board of M.M.S. was paid by Dr. W. F. Tisdale in the course of the Annual Business Meeting of M.M.A. on 11th October, 1951. . . . M.M.S. will seek publication of the well documented and impressive address of Dr. C. E. Corrigan, Treasurer, which he made before the M.M.A. members at the same meeting. . . . The Auditors, George A. Touche and Company, are welcome attenders at monthly meetings of our Finance Committee. . . . The names of five retiring M.M.S. medical trustees did not appear on the ballot paper at the M.M.A. Annual Meeting. As all were eligible for reappointment, the situation is under study. . . . Recent visitors to our office included (1) the Past President of California Physicians Services and Past President of the State Medical Association, and (2) a medical member of the Board of Trustees of the United Medical Service, New York. Commenting on an experience report in our files, one of them put it down with the remark, "Your Manitoba doctors are sure as crazy as foxes." . . . Another interesting visitor came from the Research Division of the Department of National Health and Welfare Ottawa. He sought data for a report on the scope, pattern and adequacy of the prepaid medical care movement

in Manitoba. Our records looked their best for the occasion. . . . M.M.S. tenancy lease of premises expires in June, 1952. The feasibility of shift work for the staff has been seriously considered, so crowded is the space and so great the pressure on equipment and supplies. . . . Building plans have been completed for a chosen site on Osborne Street, a few yards south of the Red Cross Block. A model has been prepared and will be on show in our office when sufficient space has been cleared. . . . The board room has been yielded for staff accommodation, and committee meetings have so far been held in the offices of Dr. McNulty. . . . Liability for costs of anaesthesia under M.M.S. is still a debatable problem at the time of writing; no doubt the solution will be found by the date of issue of the Review. . . . Finance Committee has decided on 75% prorating of claims for the next three months. . . . Claims can be interesting too; between 11th September and 10th October, the claims received in the office were, in number 19,097, in amount \$197,466.00. On the 7th November, 1951, the value of claims unprocessed in the office amounted to \$9,049.00. The causes were (1) Doctors' delayed replies to M.M.S. queries, (2) More than 2,000 claims in the month carried contract numbers that were incorrect or unverifiable, (3) Delay in matching claims in referred cases. . . . Fee Tribunal rulings from the M.M.A., adopted and ratified by the Board of M.M.S., have been mailed to all medical members on the list. . . . A revised edition of the Fee Tariff is almost completed; on M.M.S. ratification of the next batch of rulings, the copy will go to the printer. . . . We have received much valuable guidance from Mr. Hunter, the Superintendent of Insurance for Manitoba, in our negotiations with Insurance Companies in "Package Policy" deals for subscriber groups. . . . Enrollment figures stand at 118,227 on 31 October, 1951. . . . New groups accepted during September and October include the following:

General Motors of Canada, Frigidaire Products of Canada, Eaton's Retiring Employees, General Acceptance Corporation, General Exchange Insurance Corporation, Shaw Dental Laboratory, Gretzinger & Sons, School of Sanitary Inspectors, Cran Mowat & Drever Limited, H. & K. Manufacturing Company, Acme Paper Box Company Limited, London Life Assurance Company, Gretzinger Garage Limited (Beausejour), Marquette Community Group, Jacob Fashions Limited, Grant's Brewery, California Standard Company, Victor Ames & Company Limited, Co-operative Credit Society, Success Business College, Thorkelssons Limited, S. S. Kresge Company Limited, Nash Motors of Canada Limited, Brownstones Limited, Royal Canadian Navy, Birtle Community Group, Brandon Victor Club.

Editorial

J. C. Hossack, M.D., C.M. (Man.), Editor

Death by the Spoonful About Two Infamous Women

The other day a circumstance arose which reminded me of the time when I had my solitary experience of helping to frustrate a murderer in the perpetration of his villainy. It is possible that I may have unwittingly prevented, or even collaborated in, other crimes; but in this instance there could be no doubt of my role as assistant *deus ex machina*.

A colleague had asked me to see with him a woman who, he suspected, was suffering from poisoning by arsenic. Even at this distance I have a very clear picture of the villain and the victim in this drama. The husband was tall, lean and swart. His mouth was a cruel slit. His nose was thin and narrow. His eyes were of the coldest and palest blue. He was the sort of person one would look at twice—not as an object of admiration, but as the personification of heartless malevolence.

The patient lay in another room. The harsh, pigmented skin; the wasted muscles; the paralyzed limbs were enough to suggest the accuracy of my friend's diagnosis and further examination confirmed the suggestion. A diligent but fruitless search had already been made for the source of the poison. The husband and the only child of the couple were well. Somehow the woman alone was affected. What I had learned of her life and seen of her spouse made self-administration not impossible, but people seldom poison themselves with arsenic. She had had over the previous five or six months three sharp attacks of illness in which she vomited and had diarrhoea. The doctors then consulted (a different one each time) had variously diagnosed the condition as "gastro-enteritis," "food poisoning" and "intestinal flu." Apparently nothing had roused their suspicions.

We talked the matter over. We had no doubt as to the cause of the symptoms and were both equally suspicious as to the pathogenic agent. But one cannot proceed on suspicion alone to accuse of uxoricide even the most sinister looking husband. Further proof was in any case desirable and to get this we advised admission to hospital. The husband's reaction was enough to raise suspicion to the point of certainty. When told what we wanted to do he growled "I suppose that will be another fifty dollars." He had, I think, been told previously that arsenical poisoning was suspected. He showed neither concern nor alarm about his wife's state of health.

Once we had her in hospital we had some of the hair cut and sent to a laboratory, and in due

course the report came back with all the evidence we needed. When this was handed to the husband he crushed the slip and put it in his pocket. Under protection the patient eventually recovered and several months later an elderly gentleman introduced himself to me as the "father of the woman whose husband tried to kill her." As he probably had made this statement to many others, and as his son-in-law had made no effort to clear himself, I still think of him as a man stopped in the act of murdering his wife.

Apparently he had given his wife three separate doses of arsenic in some form. During the acute illnesses that followed she had managed to rid herself of some but not all of the poison. The portion that remained produced the symptoms which kept her in bed.

To the slayer who regards poison as the optimum weapon, arsenic is the optimum poison. It is colourless, tasteless, odourless and easy to obtain. For these reasons it has been used feloniously more often perhaps than any other poison. It is not difficult to procure in an honest way. "Poison Fly Pads"—heavy paper soaked in a solution of arsenic and sold dry—used to be on sale in drug, grocery and other shops. Paris Green is still easily obtainable. A preparation called "Complexion Wafers" was formerly advertised and sold quite openly although the "wafers" were actually tablet triturates containing each 1/100 grain of arsenious acid.

How often these preparations were diverted from their proper use is difficult to say, but I imagine more than one doctor has innocently served the ends of murderers. Nor is there any reason to believe that such may not be the case today, for who is likely to suspect that a patient's relatives or "friends" are doing him to death? Even in cases where there is no mystery about the nature of the illness as, for example, when one sickens after the treating of his or her infested potato plants with Paris Green, it is quite possible for some one else to increase deliberately the amount of arsenic that the person has ingested by accident. And there are other poisons.

Modern methods of diagnosis and detection make the poisoner's task more difficult, but the general absence of suspicion lessens this difficulty. It was the practice of an eminent British lecturer on Toxicology to narrate an experience qualified to make his students alert. He told how he was called on one occasion to see a patient whose illness had baffled her regular attendant. He suspected poisoning and told her husband so. The husband said that he himself had thought of that and had of late made a practice of preparing his

wife's food himself. "Then," said the doctor "I dismissed the thought." He had already, however, taken some part of the food for analysis, as the husband knew, and this he carried away with him. He had scarcely left the house when the solicitous husband shot himself.

Arsenic was known to the ancients and by them used as an external remedy. The salts with which they were familiar were coloured (orpiment, realgar). Doubtless the poisonous properties of these were already known and had been applied; but an Arabian alchemist, by heating realgar obtained white arsenic and thereby became the patron devil of poisoners. Its lethal qualities were soon in active employment for here was the answer to the toxicophilist's dream—a powerful agent without odour or taste and innocent of colour. Moreover it was eminently portable, it did not leak or spill and could be easily concealed about the person.

In those days and later, poisoning was considered an excellent way to revenge an injury, to eliminate competition, to change successions and, generally to turn the course of events into new channels. Furthermore in those days when intestinal disorders were so common, and the diagnosis "bloody flux" covered a multitude of ailments, it was not easy to be sure whether or not the flux was an act of God or an act of man. The eminence of the sufferer, his degree of unpopularity, the exigencies of his heirs, the impatience of his successors, all were factors in diagnosis. And so poisoning was often suspected when death was natural, frequently suspected when it actually had been accomplished, and sometimes unsuspected when the practitioner was very skillful and dissimulation had been great.

The interests of Justice suffered in the absence of reliable methods of detection. The fear of being poisoned was a great and ever present one among those whose taking-off would profit others. Eminent personages sought protection in the doubtful aid of amulets or the more logical submission to "tasters" of what they were about to consume. The subtlety of the poisoner not infrequently overcame these safeguards and, when he had achieved his purposes, it was equally difficult to prove how the deed had been done and by whom it had been accomplished.

The solitary instruments of detection lay in those grim laboratories of mediaeval justice—the torture chambers; but the circumstances under which the tests were made rendered their results unreliable. Moreover the wooden wedges in the Torture of the Boot could be replaced by others of pliant leather. The ropes of the rack could be softened and relaxed. The torturer as well as the poisoner was sensitive to a bribe. Again, the status of the beneficiary of the crime was often so lofty as of itself to give protection to his agent.

Being thus not ill protected against the hazards of his calling the poisoner flourished and, indeed, could persuade himself that he was useful to society, because from his successful efforts almost everyone concerned derived some benefit. The murderer got his fee and added it to his growing fortune; the pretender ascended the throne; the heir gained his inheritance; the faithless wife won her lover. Even the victim himself, provided he died in the odour of sanctity, was rewarded by a longer enjoyment of Paradise. Such thoughts were calculated to raise the professor and his profession to a point of dignity in the estimation of all who thought with him on this matter.

There is little wonder, then, that, though in different ways, the painter and the poisoner had equal honour in ducal, regal and imperial courts; for while the one with his pigments gave an earthly permanence to his models, the other with his arsenic made them immortal. Thus both combined to defeat the ravages of withering time and the normal corruption of the tomb.

This was especially true of Italy where painting and poisoning flourished side by side. There, in that country "where every prospect pleases and only man is vile," schools for poisoners sprung up, the most important being in Rome and Venice. From these colleges of mortuary science graduates went to every court in Europe—ministers of Death well qualified to keep filled their own purses and those of the diggers of graves. We read about them practicing in France and Spain. The Dukes of the City States held them in their retinues. Even England and Scotland were invaded but not to large degree for in these countries poisoning was held in low esteem.

There are documents still extant which tell how one of these Faculties met to consider requests for eliminations, how they proceeded and what they accomplished. Moreover we have at least one tariff and from this we learn that the successful assassination of the Grand Soldan was worth 500 ducats. Strangely enough the King of Spain was valued at only 150 ducats and the Pope at 100 ducats.

Where kings lead, their subjects follow and the quattrocento was no less famous for its villainies than for its works of art. During the fifteenth and sixteenth centuries particularly a poison-mania spread over all the states of Italy and into adjoining Kingdoms and Duchies. After all, an inheritance need not be great to be desirable, nor do the wives of courtiers alone have lovers. The mediaeval materia medica was strong on poisons, and practitioners of the art were to be found in every rank, in every calling, in every town.

Probably no single person brought about so many deaths as did a Sicilian woman named Toffana. She commenced practice while still in her teens and continued in it until she had passed the biblical three score years and ten when finally

she was strangled. She avoided trouble by frequently changing her name and place of operation, and gained added security by being careful in her choice of clients.

Taking advantage of the fact that arsenic was highly regarded as a cosmetic, she bottled a strong solution and labeled it variously "Aqua Toffana," "Acquetta di Napoli" and "Manna of St. Nicholas." Sometimes she professed that her phials contained oozings gathered at the tomb of St. Nicholas of Bari, and affixed religious symbols to the bottles. So disguised, her leprous distillment found its way easily through custom houses and was eagerly lapped up by ailing persons who did indeed gain from these lappings release from their sufferings.

But the ladies, who were her chief customers, were usually more interested in cutting the thin spun threads of obnoxiously healthy husbands than in abbreviating lives which nature was obviously shortening. A few drops of the "Aqua" or "Manna" added to his wine soon brought on symptoms which had become frightfully common, and with a speed that varied with the disposition of the wife, the husband perished swiftly or slowly.

Signora Toffana had reached the age of seventy before justice caught up with her. Her famous Acquetta di Napoli was dreaded by every noble family in Naples where, it is said, over 600 persons died from it; and literally gallons were sold for use or resale. Toffana was finally arrested and introduced to the rack which drew from her such a shocking series of disclosures that for once at least the torturer got honest satisfaction as he turned the screw.

Poison is a woman's weapon. She has easy access to food. The rope is slow and its use may be beyond her strength. The knife is messy. Therefore we find in the facts and fables of poisoning that its most eminent practitioners were women. Whether the stories about Lucrezia Borgia and Catherine de Medici are true or not, there can be no question about Toffana and her French counterpart the Marquise de Brinvilliers.

This latter lady, noble only in title, infamous in all things else, flourished three hundred years ago. Marie Madeleine D'Aubray was the daughter of a magistrate and was the eldest of his five children. Her schooling was better than that received by most women of her time except that of moral instruction she had none. When she was twenty-one she married the wealthy Marquis de Brinvilliers but in a few years she had tired of him. Indeed she appears to have acquired paramours very shortly after her marriage. A number of children filled the house among which, the husband thought, some must undoubtedly be his, but he realized that the fruitfulness of a wife is no evidence of her husband's potency and he had every reason to suspect that Marie did not reserve her favours for him alone. For example there was

Briancourt, the children's tutor, who, he was sure, shared his wife's embraces.

When not languishing in the arms of a lover Marie spent much of her leisure in the study of toxicology. It is said that under the guise of charitable visits to hospitals she tried out her poisons. The husband must have gathered that she was planning his destruction because he took extraordinary precautions about his food. He would eat and drink only what he received from the hands of a most trusted servant and saw to it that he sat upon his wife's left hand when at table.

Some seven or eight years after their marriage the Marquis and his Marquise took to live with them a handsome and engaging Captain of Cavalry named Sainte-Croix and to him the Marquise gave more than mere entree to the gallant officer who, while not averse to an affaire, certainly had no desire to marry this daughter of Hecate. A bond of mutual understanding was forged between the two men. Sainte-Croix sat at the right of the Marquise for love made him safe from envenomment, and Madame de Sevigne, who had something to say upon the matter, states that when his spouse had managed (as occasionally happened) to get a little poison into her lord and master, the paramour promptly supplied him with an antidote.

This extraordinary arrangement between husband and lover recalls the reported saying of an aging Austrian noble at a time when it was not unusual for such gentlemen to solace themselves in their age by acquiring young wives who, naturally, had lovers less unfitted to light the lamp of love. A foreign friend of such a personage revealed, as he thought, the infidelity of the Baroness and with heat proclaimed his willingness to second the injured party on the field of honour. "What!" exclaimed the husband, "Would you have me slay the father of my children?"

Marie was too subtle and too determined to allow her husband and her lover to thwart her purpose. In the words of Madame de Sevigne the Marquis "was tossed like a ball" between the poisoning wife and the "antidoting" lover. DeBrinvilliers, seeking to protect himself, consumed quantities of "theriac"—the ancient universal antidote which was composed chiefly of treacle—while stories about the relationship of the Marquise and Sainte-Croix spread widely. Eventually these rumours reached the ears of Marie's father who, having obtained a lettre de cachet, had Sainte-Croix sent to the Bastille.

While a prisoner Sainte-Croix met two Italian practitioners of poisoning (one of whom had left 150 corpses behind him in Rome) and collaborated with them in experiments which, apparently, their incarceration did not prevent. Perhaps because it was its mistress' hobby or because there was nothing more amusing to do, Sainte-Croix developed a keen interest in the art of shortening

life, and the information he gathered he relayed to the Marquise.

Meanwhile this High Priestess of Atropos went about the foul business of murdering her husband. Now that Sainte-Croix was no longer there to defend him, his solitary reliance was placed on amulets and treacle neither of which proved protective, and so before long the poor Marquis was purged and poisoned into his grave. With this matter disposed of the Marquise turned her thoughts towards her father. His death would avenge the imprisonment of her lover and, at the same time, fill her now empty coffers. When Sainte-Croix was liberated he hurried to her and the two plotted the deaths of Marie's father, brothers and sister.

By this time the guilty pair had amassed a unique amount of toxicological lore, and some of their preparations completely baffled the analysts of the day. They could at will bring death early or late, easily or painfully. Before the attempt on the D'Arblay family experimental work was done on the sick-poor and the well-poor whom the Marquise visited in the guise of a Sister of Charity. When she was satisfied that her agents were certain in action and difficult or impossible to detect, she visited her family.

Her father was the first to sicken. We are told that he suffered great agony during the eight months it took him to die. No sooner had Marie received her share of his money than she returned to the riotous and extravagant mode of life which had already dissipated one large fortune. Then came the need for more money and the attack upon her brothers' lives. Both of her brothers sickened about the same time and in a similar way. As in the father's case the illness was painful and prolonged. When the younger brother died three months after the older one the doctors insisted that he had been poisoned and demanded a post-mortem examination.

The doctors' suspicion was confirmed as far as confirmation was possible in those days but no doubt appears to have been cast on the loyalty of the servant or of the sincerity of the sister, although these shared the crimes between them. Indeed, when he saw that he was dying, the younger son left a legacy to La Chaussee—the servant—for his devotion. As for Marie, her virtue and amiability were never more apparent—or less real.

For some reason Sainte-Croix found himself again in prison. He had sufficient liberty to continue his toxicological studies and, in one of them, accidentally poisoned himself. When his effects were examined, among them was found a small box labeled to be sent unopened to the Marquise. The instructions against opening the box were so emphatic as to arouse the curiosity of the authorities who, on opening it, found within a collection of various poisonous substances, money that had

been given Sainte-Croix as a bribe, and a number of highly compromising documents.

The relationship of the Marquise and Sainte-Croix now stood revealed as more than the association of profligates. Documents in her own writing proved them to be murderers. The story was quickly spread abroad and was on everyone's lips.

When it came to her ears that her secret was at last laid bare the Marquise took refuge in flight to England where she became a matter for the interchange of letters between Louis XIV and Charles I. To escape extradition she fled to Holland where she sought sanctuary in various religious houses but was finally arrested. La Chaussee, the servant whose "devotion" to the man he murdered earned him a legacy, was also arrested and, under torture, finally confessed to his own and his mistress' share in the killing of his former master, and to their other collaborations. For punishment he was broken alive upon the wheel—a somewhat slow form of execution which prolonged the agony of a most painful death.

The Marquise, for her part, was now in the clutches of the law and, by an act of poetic justice, had by her none of those swift, subtle life-enders with which she had become so familiar, which she had used so often and which, now, she would have gladly taken to help herself into another world. In their absence she attempted some feeble efforts to commit suicide but the attempts failed.

When brought to trial she pleaded not guilty, denied with indignation her many crimes and defended herself with vigour. And then out of the past came Briancourt, the tutor, her early paramour and the sharer of her secrets. Torture or conscience or both persuaded him to tell all he knew and that, added to what the authorities had already learned, sealed her doom. For nearly half of her forty-six years she had been bringing death to others and now her own hour was at hand.

She was sentenced to be subjected to "the question ordinary and extraordinary"—a combination of exquisite torments admirably designed to make the most hardened criminal sincerely repentant as the hours of torture dragged on. This done she was to be conveyed to the Church of Paris and there to stand bare-foot with a rope about her neck while she confessed her manifold iniquities before the hostile crowd that was sure to gather. After this she was to be taken in a cart to the Place de Grave and executed. Her body was then to be burned and her ashes strewn to the winds.

To the very end she seems to have been able to impose on people. After sentence had been passed but before it had been executed she made a full confession of her crimes, and so impressed her spiritual adviser that he left a fervent description of her last moments. According to this account

"she manifested so sincere and pious a contrition for her enormities, and such satisfactory evidence of conversion, that he (the confessor) would have been willing to change places with the penitent."

The sentence was carried out to the letter. All Paris turned out to watch the execution and, because of her notoriety, Le Brun, the famous painter, from a point of vantage transferred her to canvas. She appears as a stout, unattractive female, clutching a crucifix in her bound hands and with her eyes piously upturned.

Her early picture is very different. In her youth Marie Madeleine D'Aubray was a sweet and charming maiden who "impressed the beholder with a sense of virtue and amiability." "Never," says a later writer, "was the science of physiognomy more completely stultified. Beneath that fair and attractive exterior was concealed one of the blackest and most depraved hearts that ever beat within a female bosom."

Why did these women become infamous? Some reason always lies behind the perpetration of a murder. In the single murder of, or by, one individual the motive is usually not difficult to find—the murderer seeks to destroy that which he fears, or seeks to gain that which he desires. For murder in the mass there are no more than three reasons—enormous greed; or the slayer is convinced that he must slay, for so his disordered fancy tells him he has been instructed; or he is moved by the spirit of destruction, to kill merely for the sake of killing.

It is a question if Toffana of herself took any lives. She sold poison as another might sell pistols, concerned only with the profit of her trade, careless about the use to which her merchandise was put. She grew rich on the crimes of others by making these crimes possible. Thus, at second-hand, she murdered for gain. She was an alchemist who transmuted arsenic into gold with life itself as her Philosopher's Stone. She was completely callous, completely without moral sense. Perhaps she derived pleasure from the fact that she was a Dealer in Death, the possessor of a terrible and malevolent power. We know too little about her to find a deeper reason for her crime.

Nor are we completely familiar with the circumstances which surrounded the life of the Marquise de Brinvilliers. Parental discipline may have fostered rebellion. Her early lusts were chiefly of the flesh. She learned dissimulation early but her profligacy was too great to hide. Yet its very greatness masked effectively her deeper and greater viciousness. Her motives were

complex. She despised the husband whom she had never loved and slew him to be free. She killed the father whom she had disgraced out of vengeance and for his wealth. Her brothers and her sister were murdered out of hate and out of greed. Although these crimes were heinous their accomplishment had a reasonable purpose. She could have stopped there. Instead, she applied her art to a host of nameless ones. These she destroyed as if they were so many laboratory animals whose sacrifice disturbed her not a whit. Perhaps it flattered her ego thus wantonly to scatter death; to stand by and watch the fruitless efforts of the doctors, the puzzlement of those who were suspicious of everyone but her. She radiated virtue and amiability, was the object of sympathetic condolences. "There's no art to find the mind's construction in the face."

Neither poisoning as a practice nor arsenic as a means are prerogatives of the gentler sex as witness my own near murderer. So old a practice is not likely now to have ceased, and there are subtle means not likely to be suspected, not easy of detection. That baneful trinity of doctors—Lamson, Pritchard and Crippen—were caught because they betrayed themselves, as is so often the case with unmasked felons. An air of innocence may disarm suspicion which, in any case, is seldom acute. By the law of averages not a few must succeed in their nefarious practices even today. Perhaps over the Continents even at this moment there are some puzzled doctors, and some doctors who are not puzzled but misled, bending over patients to whom death is being carried in a spoon.

Physical Medicine Congress

International Congress of Physical Medicine

(1952). Organized by the British Board of Management of the International Federation of Physical Medicine.

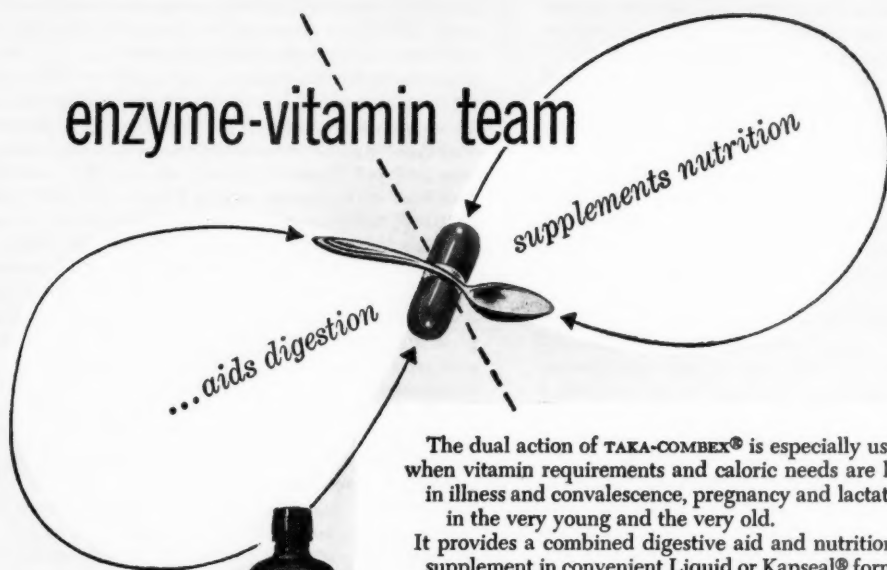
Preliminary Notice

President, Lord Horder; Vice-President, Dr. Frank Howitt (Treasurer), Dr. Philippe Bauwens (Chairman of the Executive Committee), Dr. Frank S. Cooksey; Hon. Secretary, Dr. A. C. Boyle. Address: 45 Lincoln's Inn Fields, London, W.C.2.

The Congress will be held in London from the 14th to the 19th July, 1952.

Full details will be notified later. Applications for the Provisional Programme should be addressed to the Honorary Secretary, International Congress of Physical Medicine (1952), 45 Lincoln's Inn Fields, London, W.C.2.

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Deaths from Poisoning

I. O. Fryer, M.D.
Provincial Coroner

If earning capacity alone were the criterion by which human loss could be estimated, poisoning in the District of Winnipeg would seem to represent a pecuniary loss of over \$4,500,000 in the last five years.

The coroner's files covering the deaths from poisons or from drugs taken in poisonous amounts in Winnipeg during the period 1946-1950, bring to attention the following facts.

Number of deaths (Female 44, Male 66)	110
Average age at death	43¾ Years
Average number of expectant years lost to the individual	21 Years
Toxicological examinations and Autopsies performed	95
Number of different poisons listed	24
Suicides by poisoning	51
Accidental deaths by poisons	26
Deaths from drugs taken inadvertently (without suicidal intention)	11
Poisons, or drugs taken in poisonous amount causing death: Gas, Carbon Monoxide (Suicidal 17, Accidental 15)	32
Barbiturates	20
(a) (Suicidal)	11
(b) (Through ignorance of their dangerous action, or, inadvertently taken)	9
Methyl Alcohol	11
Ethyl Alcohol	8
Arsenic	6
Lysol (4), Formalin (4)	8
Phosphorus	3
Cyanides	4
Morphine (2), Strychnine (2), Lye (2), Atropine (2)	8
Barium, Codein, Thio-Bismol, Insulin, Muriatic Acid, Mercury, Paraldehyde, Aspirin, Phenol, Congo Red (1 of each)	10
Total	110

As stated, the above records were compiled from the coroner's files by checking some 3,500 investigations in the last five years.

It might be of interest to state at this point that in the coroner's office all investigations made since 1927 by the provincial coroners are available, as the records of the late Dr. H. M. Speechly and late Dr. W. R. Gorrell have been saved and assembled.

From the above records it is obvious that barbiturates represent the second largest group and it might be of advantage and timely to discuss some phases pertaining to their uses and abuses.

The barbiturates were first developed in 1903 by a Nobel Prize Winner, Emil Fisher, who discovered that compounds of barbituric acid could produce deep sleep. He was in Verona, Italy, when his assistants completed their findings, so he named the new drug "Veronal." today there are about 1,500 known derivatives of barbituric acid and an estimated sixty of them are in popular use under a variety of trade names. In action these drugs are sedative and hypnotic. They act on the central nervous system, deprive the nerve cells of oxygen, and thus cause sleep. On the respiratory centre they act as depressants. All when used properly on prescription are invaluable

aids in treatment. However, today, according to Dr. W. E. Hambourger (who has investigated the barbiturates and published his findings in the Journal of the American Medical Association)—"Chronic intoxication from barbiturates or Barbiturism plays a more important role in society than addiction to cocaine." Thousands of unstable people are now taking these easily procured "slumber pills" in ever increasing amounts with lamentable results. Close to 8,000,000 sleeping pills are sold every day in the United States. In one year 895 people in the United States died from barbiturate poisoning.

The recent up-surge in drug addiction has hit the United States with the force of a hurricane and alarm is felt in Canada and other countries as well. It is true, of course, that the chief concern is over addiction to the more vicious drugs, marijuana and opium derivatives. Perhaps it is well that the public should become alert to the dangers of drug addiction, whatever form it takes.

An alarmed Chicago discovered that out of every five "Narcotic Junkers" the police officers were arresting one was a minor. New York police estimated the city held at least 5,000 teen-age addicts. Recently a series of Detroit raids netted 48 "Dope Junkers," all of whom had been selling to high school students.

Chief of Police, Walter Mulligan, Vancouver, in a very recent special report prepared for the City Council, estimated there are 1,300 drug addicts in Vancouver and some 4,000 in Canada.

On July 26, 1951, Herbert O. Conor, Chairman of the Senate Crime Committee, United States, asked for a sentence of twenty years to life (with no chance for probation) for adults found guilty of furnishing narcotics to any person under 17 years of age.

In "Materia Medica and Pharmacology" Walter A. Bastedo makes a statement worth while remembering—"Mostly as the result of prescriptions by physicians, many patients acquire the habit of taking barbiturates every night, or two or three times a day. For this reason the prescription should be guarded in the emotionally unstable, the depressed, the psychopathic and the psychoneurotic. Pronounced effects are loss of judgment, loss of memory, ideas of persecution, vertigo and disturbance of speech."

At this point it might be interesting to cite briefly the results of three or four investigations recorded in the coroner's files in Winnipeg.

Case 279—1948

At 4 p.m. April 30, 1948, I was called by the City Police to attend at Kildonan Park. On reaching a point at the Red River bank, where the flood waters were under-cutting a projecting ledge, I found the dead body of a young man within three feet of the rushing current. The body was very

neatly clothed, contained some residual body heat, but bore no marks of any external violence. Nothing in the clothing established his identity. When identification was made by means of finger prints through army files in Ottawa, it was then learned that the deceased was a third-year pharmacy student.

No motive of any kind was found for the unusual behaviour. The father's only comment was that the boy suffered from sleeplessness and the fact was established through his room mate, a fellow student, that during "cramming" for exams, the deceased had been taking a large number of sleeping pills. Two capsules found on the ground near the body, were examined and found to be cyanide of potassium.

Post mortem and toxicological examination proved the death due to cyanide poisoning.

Case 521—1949

At about 5.20 a.m., September 15, 1949, I was called by the City Police to investigate a sudden death that had been reported to them. In a private home I found the dead body of a young woman. The body was clothed in a dressing gown and sleeping apparel. The husband gave the following facts. Two years previously his wife had been operated on. Since that time she had been taking sleeping pills in increasing amounts. The last few days a cold had developed and a cough mixture containing codeine had been prescribed.

His wife, at different times after taking sleeping pills, appeared to have difficulty in breathing. On the night in question, she had taken a number of pills and gone to bed. She arose at 3 a.m. went downstairs, and as she was secretary of a bowling club, started working on her books. She was heard to fall off the chair to the floor. Her husband rushed down and carried his wife upstairs. There was noticed the usual difficulty in breathing, more marked than at other times. In a short time, breathing stopped, and nothing that her husband could do to resuscitate his wife was effective. The family doctor was called, but the woman was dead on his arrival.

A toxicological examination by the R.C.M.P., Regina, proved the case one of death from barbiturate poisoning, probably not suicidal, but more likely due to the fact that the drug was taken inadvertently.

Case 512—1946

An unusually competent business girl, employed for some time by a business firm, found tremendous responsibilities thrown on her, when the senior manager died suddenly of a heart attack and she attempted to carry on the work.

Sleeplessness developed. Barbiturates were resorted to in increasing amounts. Business associ-

ates noticed a change in manners and personality, and what appeared to be derangement in judgment and memory in the young woman. I was called one Sunday afternoon and found the girl dead in bed. The deceased roomed alone. A note left in the hand writing of the deceased proved the death as intentional.

Case 504—1950

This young man had been taking sleeping pills since leaving a hospital. At 11.30 p.m. he left his friends and entered his hotel, after having attended a party where a small amount of intoxicants had been taken.

On my arrival the next afternoon at his room in the hotel, I found an open box of barbiturate pills on his dresser, near his bed. Two pills had fallen to the floor, and there were two on the dresser. The young man was dead. He was clothed in night attire and bed covers were in order. No marks of any external violence were evident on the body.

Post mortem and toxicological examination proved the cause of death to be barbiturate poisoning.

Conclusions

In some of these cases it would appear barbiturates decidedly altered the individual's judgment and behaviour.

It is difficult to differentiate suicide from accidental death in individuals in cases of poisoning.

Addiction is such a major problem that international concern is evident. Recently in Geneva, Harry Anslinger, Commissioner of Narcotics in the United States, recommended that the United Nations Economic and Social Council deal with the problem, with recommendations of a 75% reduction in the world's manufacture of drugs, where their action leads to addiction.

Suggestions to Practitioners

1. When called to a case where you are suspicious that death has occurred from poisoning:

- (a) Notify the police or the coroner.
- (b) Save specimens that might be needed in investigations.
- (c) Don't allow the body to be moved to a funeral home until investigations have been completed.

2. If a telephoned prescription is waiting at a drug store to be signed by a doctor, and a death occurs from the drug in the interval, an unfair responsibility is thrown on the druggist.

3. It is well in some cases to check carefully all circumstances before ordering a large amount of any drug.

4. Warn patients not to keep sleeping pills within easy reach of their bedside.

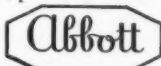
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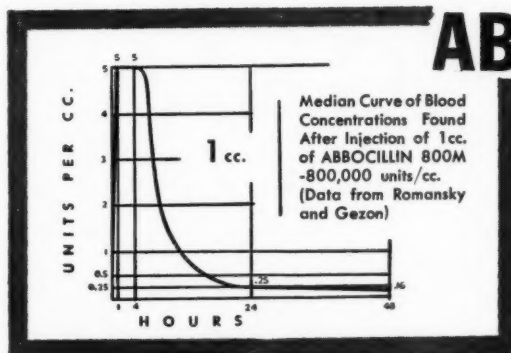
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Social News

Reported by K. Borthwick-Leslie, M.D.



The Rogues Gallery you see is a souvenir of the 10th annual reunion of our 1941 Grads. The organization was in the capable hands of Frank Stuart. Dinner in the Medical Arts Club Rooms, followed by dancing at the Casino. Drs. Lennox Bell and J. D. Adamson were the invited guests, but J. D. sent regrets only as did many members forced to be absent.

For your enlightenment those handsome specimen present were: Back Row—Left to right, S. D. Tusen, B. Loadman, S. Luginsky, M. McLandress, Clint North, Ed. Hudson, A. Warkentin, Otto Schmidt, E. Daniel, H. Hurst, P. Hooge, J. Gemmell, D. Hastings, Sparling East, J. Hoogstratten. Seated: F. Stuart, L. Beckstead, H. Geller, M. Kahanovitch, E. Eshoo, R. McFarlane, S. R. Levin, W. Guest. Mascot: Dean Lennox Bell.

To Elinor, hats off in congratulations for the first time in Canadian university history a woman doctor has been appointed chairman of the Department of Obstetrics and Gynaecology. Professor Elinor F. E. Black has the honor of succeeding our beloved Dr. Fred McGuinness who is retiring.

Elinor has acquired a number of "firsts" in Canada, having been the first woman to be elected to the Fellowship of the Royal College of Obstetrics and Gynaecologists, London, that in 1950.

In 1933 she was the "first" to become Assistant Obstetrician at the General Hospital and demonstrator in her specialty at the U. of M.

In 1937 and '38 after post-graduate work in London she became a member of the Royal College of Obstetricians and Gynaecologists.

In 1948 she was admitted as a Fellow of Royal College of Surgeons of Canada.

During the war years she did yeoman service and was Fred's right hand man holding the local

obstetrical fort while most of our men were holding the R.C.A.M.C. fort.

The best of health, luck and co-operation in your new post, Elinor.

♦

Dr. Brian D. Best, in the same department, has been promoted from Assistant Professor to Professor Best. A graduate of 1934, he returned to Winnipeg in 1938 after post-graduate work in London and Edinburgh and has been associated with the department ever since.

♦

Major Allan Davidson is at present on the high seas having sailed Monday last.

He is the consulting surgeon on board, responsible for the welfare of the 27th Battalion, in transit from Canada to Germany. I understand this trip is for transportation only and that Allan will be home again, probably for Xmas.

Merry, Merry happy Christmas and the best of all good wishes for 1952 to everyone!

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Association Page

Reported by M. T. Macfarland, M.D.

Manitoba Medical Association Officers 1951 - 1952

President:

Dr. A. M. Goodwin, Winnipeg.

1st Vice-President:

Dr. C. W. Wiebe, Winkler, Man.

2nd Vice-President:

Dr. W. F. Tisdale, Winnipeg.

Honorary Secretary:

Dr. F. G. Stuart, Winnipeg.

Honorary Treasurer:

Dr. R. Lyons, Winnipeg.

Member at Large, Rural:

Dr. A. S. Little, Dauphin, Man.

Member at Large, Urban:

Dr. A. B. Houston, Winnipeg.

**Nomination for Senior Membership in
Canadian Medical Association, 1952:**

Dr. Ross B. Mitchell, Winnipeg.

Medico-Legal Society

In the Reports to Council of the Canadian Medical Association at Saskatoon in June, 1949, mention was made of preliminary discussions held with the Canadian Bar Association, looking towards a medico-legal society. Such groups have existed for half a century in the British Isles, and more recently in the United States, in the City of Toronto, York County, and latterly in the City of Hamilton. Little active interest was taken in this Province until this year when a letter, addressed from the Chairman, Manitoba Section of the Canadian Bar Association to the College of Physicians and Surgeons, set the wheels in motion.

The initial meeting was held at the Manitoba Club on Tuesday, November 6th, when the following were present:

Mr. B. V. Richardson, K.C., Chairman; Mr. F. R. Evans, K.C., President, Manitoba Law Society; Dr. C. E. Corrigan, Vice-President, College of Physicians and Surgeons of Manitoba; Mr. C. V. McArthur, K.C., Vice-President for Manitoba, Canadian Bar Association; Dr. A. M. Goodwin, President, Manitoba Medical Association; Mr. S. Freedman, K.C., Vice-President, Manitoba Bar Association; Dr. I. O. Fryer, Provincial Coroner; Mr. T. W. Laidlaw, K.C.; Dr. Edward Johnson; Mr. H. G. H. Smith, K.C.; Dr. M. T. Macfarland, Executive Secretary, Manitoba Medical Association, and Registrar, College of Physicians and Surgeons of Manitoba, and Mr. J. L. Carpenter, who acted as Secretary for the meeting.

It was agreed that a Manitoba Medico-Legal Society be formed with membership open to all

members in good standing of each profession on payment of a small annual fee.

Purpose and object of the Society is to create a method of co-operation and understanding between the two professions in matters of mutual interest. Its aim is the ultimate benefit to the public resulting from their combined services.

A planning committee under the direction of Messrs. B. V. Richardson, Chairman; J. L. Carpenter, Secretary, and Dr. C. E. Corrigan and Dr. A. M. Goodwin, was set up to draft a constitution and by-laws and to arrange for the first of the regular meetings which will be held on the last Tuesday evening of the months of January, February, March and April.

List of problems to be discussed: Doctors and the Law, Medical Witnesses, Industrial Hazards, Institutional Treatment of Delinquents, Psychiatry and Criminal Law, Divorce Law, Artificial Insemination, Efficiency of Blood Tests in Drunken Driving and Parenthood, Treatment of the Criminally Insane, and Liability for Hospital Negligence.

Association Dues 1952

Resolution Adopted at Annual Meeting:

THAT (1) for all those members engaged in private practice, (2) for those members who have a municipal contract and who also are engaged part-time in private practice, and (3) for those members employed by a person, or group, submitting accounts on a fee-for-service basis, the Annual Dues for Membership of the Canadian Medical Association, Manitoba Division, be increased from \$35.00 to \$50.00 per annum;

THAT (1) for recent graduates of two years' standing, and (2) for those members who are employed on salary and unable to deduct for income tax purposes, the Annual Dues for Membership be increased from \$15.00 to \$25.00 per annum.

Attention is again drawn to the fact that if the contract with the employer stipulates that certain expense items are necessary to earn the livelihood, the net salary of the employee may be reduced by the amount of the expenses for which vouchers are provided to the employer.

Another resolution which received executive approval is as follows: "THAT as of January 1st, 1952, any member of the Manitoba Division, Canadian Medical Association, who, having joined originally to a limited membership because of a fixed salary, be required to pay the full membership fee if he (or she) changes status to that of full or partial private practice within six months of so joining."



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Isoprenaline (Isopropyl - nor - Adrenaline), a homologue of Epinephrine, is administered sublingually in tablet form or by oral inhalation as a spray solution.

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1. Relief without the inconvenience of repeated injections.
2. When administered sublingually its bronchial relaxing effect is apparent within five to ten minutes.
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Presentation

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Civil Defence

Since the transfer of the medical aspects of Civil Defence planning to the Department of Health and Public Welfare, word has been received of the organization of a Provincial Health Service Advisory Committee to which different organizations, including our own, have been requested to appoint representatives. Such a choice has already been made. Impetus has been given to Civil Defence matters in the Greater Winnipeg area by the appointment of Dr. H. M. Malcolmson as Director of Health Services for the Metropolitan Civil Defence Board. Realizing that the immediate concern will be the setting up of nucleus committees, Dr. Malcolmson has requested this Association and the various District Medical Societies to co-operate. A communication has gone to each of the District Societies and offers of assistance have already been received. It is quite to be expected that the profession will be in the vanguard in matters of such general concern.

Workmen's Compensation Board Negotiating Committee

A meeting was held in the Commission Office on the afternoon of Thursday, October 25th, when Messrs. G. L. Cousley, J. L. Carpenter, J. L. McBride, P. V. E. Jones, N. Fletcher and Dr. D. J. Fraser received Drs. P. H. McNulty, C. H. A. Walton, C. B. Schoemperlen, C. M. Thomas and M. T. Macfarland. During the two and a quarter hour interview opportunity was provided to present a proposed fee schedule and to discuss items of difference between the Board and the profession. It is expected that when consideration of the points raised has been given, counter proposals will be received from the Board, and another meeting will be required.

Professional Confidence and the Hospital Service Contract

The following opinion has been given by our solicitor: "There is some authority for the view that a legal obligation does exist and there have been cases where doctors have been sued. However, the privilege is that of the patient and not the doctor. It is not up to the doctor to decide whether or not information in his possession should be given out. It is for the patient to do so. The question, therefore, is one of whether or not subscribers to the Manitoba Hospital Service have effectively authorized the doctor to furnish information to the Association respecting medical care rendered to the subscriber or a dependent. The contract between the subscriber and the Association is embodied in the application form of the subscriber and the terms and conditions prescribed by the Association as part of its acceptance of the application. By the terms and conditions a subscriber agrees to authorize and directs any physician from whom he or any dependent has received personal services or prepayment to furnish the Association any and all information, records and copies of records relating to the care, diagnosis or

services rendered to the subscriber or a dependent by any such physician. **In my opinion, this is a binding contract between the parties and the Association and is sufficient authority for the physician to act upon."**

Report of Committee on the Proposed Incorporation of Radiologists

"Your Committee appointed to study the proposed bill to incorporate the Manitoba Radiologists Association reports as follows: The Committee appointed by the Executive of the Manitoba Medical Association was augmented to include Dr. D. Wheeler, Dr. R. A. Macpherson and Dr. A. W. McCulloch, selected by the Radiologists. The Committee met on June 5th at which time there was a general discussion and a decision to obtain information and comments from other provinces.

The Committee met again on September 19th when we reviewed the replies received from our enquiries. The final opinion reached was that the Manitoba Medical Association should not oppose enactment of the proposed bill of incorporation of the Manitoba Radiologists Association, providing that the Radiologists would assure the Manitoba Medical Association that they:

1. Will not take any action as an incorporated body without first reference to the Manitoba Medical Association, and then not unless dissatisfied with the results obtained.
2. Will not in any subsequent action take any steps which would be detrimental to the interests of the medical profession of the Province, nor which would lessen the strength which is inherent in the unity of the profession as a whole.
3. Will not prescribe nor adopt codes of ethics which would interfere with the rights of practice of their members to a degree not recognized by the Manitoba Medical Association.
4. Would alter the wording of Section 3 of the proposed bill in such a way as to lessen any possible tendency to criticism in the Legislature, to the effect that the bill is intended primarily for the interests of the physicians.
5. Would prepare a set of by-laws qualifying in particular Subsections (d), (e), (f), and (g), of Section 9 of the proposed bill; and submit such by-laws for consideration of any Committee appointed by the new Executive of the Manitoba Medical Association for the purpose of further study of the proposed bill.
6. Would not amend any such by-laws which might be approved by the Committee without first consulting the Manitoba Medical Association.

You will appreciate from this report that your Committee is of the opinion that further deliberation on the proposed bill is necessary. Any Committee which the new Executive of the Manitoba Medical Association sees fit to name should be set up as soon as possible to assure sufficient time for study of any revision of the bill, and for study of proposed by-laws before it is necessary to submit the bill to the Legislature."

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Suppositories of 0.1 Gm. and 0.2 Gm.

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of sodium salt of SONERYL per ounce.

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INDICATIONS: insomnia due to physical pain, dysmenorrhea, migraine, neuralgia, sciatica.

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SONERYL 65mg. (1 grain)

phenacetin 0.23 Gm. (3½ grains)

codeine phosphate 8 mg. (⅛ grain)

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Report of Committee on Contract Practice

"Your committee has been making some study of contracts in the Province of Manitoba. Many are in existence, some of long standing and some more recent, even post-dating the inception of Manitoba Medical Service and possibly in competition with it. Full details of all contracts are not yet to hand and much more study will be required before all facts are available. It is, therefore, suggested that the work of such a committee be carried on during the coming year and, if possible, bring in a full report at a future date."

Southern District Medical Society

A meeting of the Southern District Medical Society was held at the Altona Hospital on the afternoon of Thursday, September 20th.

Attending were: Doctors A. P. Warkentin, (President), Winkler; J. P. Boreski, (Secretary-Treasurer), Gretna; J. G. Lohrenz, S. S. Toni and W. Artes, Altona; W. M. Colert and J. C. Menzies, Morden; J. C. Elias, Morris; T. W. D. Miller, Roland; J. H. Boucher, St. Jean; C. W. Wiebe, Winkler; K. C. McGibbon, J. L. Beckstead, and M. T. Macfarland, Winnipeg.

Following a brief business session, scientific papers were presented by Dr. J. L. Beckstead on Causation Factors in Chest Disease, and Dr. K. C. McGibbon on Orthopaedic Problems in the young.

At the election of officers Dr. W. M. Colert, Morden, was named President, and Dr. J. C. Menzies, Morden, Secretary-Treasurer for the ensuing year.

Following the formal meeting a delicious dinner was served by the hospital staff, and medical films were shown by Dr. S. S. Toni.

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College of Physicians and Surgeons of Manitoba

Specialist Register

The following by-law was approved at the Annual Meeting of Council on October 13th, 1951:

WHEREAS the College of Physicians and Surgeons of Manitoba deem it desirable that a Register of Specialists be established and maintained by the College.

AND WHEREAS The Medical Act provides for the recording of higher degrees or additional qualifications of persons whose names appear on the Manitoba Medical Register.

NOW THEREFORE BE IT ENACTED and it is hereby enacted as follows:

1. That the Council do establish and maintain a Register to be kept by the Registrar to be known as the Specialists Register in which shall be entered the names of all persons who have complied with the provisions hereof.

2. Any person whose name appears in the Manitoba Medical Register and who is either:

- (a) A Fellow of the Royal College of Physicians and Surgeons of Canada; or
- (b) A certificated specialist of the Royal College of Physicians and Surgeons of Canada;

shall be entitled to have his name entered in the Specialists Register.

3. Any person whose name appears in the Manitoba Medical Register may at any time before January 1st, 1954, make application to be registered as a specialist and upon approval of his application by the special committee, appointed as hereinafter provided, may have his name entered in the Specialists Register.

4. The special committee hereinbefore referred to shall consist of six members as follows:

- (i) Two representatives of the College of Physicians and Surgeons of Manitoba appointed by the Council and of whom one shall be the chairman of the committee;
- (ii) Two representatives of and appointed by the Faculty of Medicine of the University of Manitoba; and
- (iii) Two representatives of and appointed by the Manitoba Medical Association.

The members of the committee shall hold office until and including the 31st day of December, 1953, on which day the said committee shall cease to function. It shall be the duty of the committee to pass upon the qualifications of any applicant for registration in the Specialists Register to accept or reject the application.

5. On and after the 1st day of January, 1954, either a fellowship of the Royal College of Physicians and Surgeons of Canada or an enrollment therein as a certificated specialist shall be the accepted standard for registration as a specialist, provided, however, in special circumstances a person whose name appears in the Manitoba Medical Register and who is not a Fellow or a certificated specialist of the Royal College of Physicians and Surgeons of Canada may apply to have his name entered in the Specialists Register. The Council, after inquiry into the circumstances of the case, may in its sole discretion accept or reject such application and if accepted direct that upon payment of the prescribed fee the name of the applicant be entered in the Specialists Register.

Application form accompanied by supporting documents and the fee of Five Dollars (\$5.00) payable at par in Winnipeg, should be forwarded to Dr. M. T. Macfarland, Registrar, 604 Medical Arts Building, WINNIPEG, Manitoba.

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Department of Health and Public Welfare
Comparisons Communicable Diseases — Manitoba (Whites and Indians)

DISEASES	1951		1950		Total	
	Aug. 12 to Sept. 8, '51	July 15 to Aug. 11, '51	Aug. 13 to Sept. 9, '50	July 16 to Aug. 12, '50	Jan. 1 to Sept. 8, '51	Jan. 1 to Sept. 9, '50
Anterior Poliomyelitis	6	1	3	0	9	10
Chickenpox	40	106	37	70	1162	1036
Diphtheria	0	0	8	1	5	14
Diarrhoea and Enteritis, under 1 yr.	13	15	16	20	96	113
Diphtheria Carriers	0	0	0	0	1	0
Dysentery—Amoebic	0	0	0	0	0	2
Dysentery—Bacillary	3	7	7	11	23	114
Erysipelas	1	2	6	3	18	12
Encephalitis	0	0	1	0	2	1
Influenza	2	4	9	5	763	191
Measles	43	113	22	43	2745	166
Measles—German	4	6	0	0	38	31
Meningococcal Meningitis	3	4	0	0	25	13
Mumps	44	45	22	32	1080	282
Ophthalmia Neonatorum	2	0	0	0	2	1
Pneumonia—Lobar	11	11	15	6	199	173
Puerperal Fever	1	0	0	0	1	4
Scarlet Fever	79	73	21	14	945	229
Septic Sore Throat	4	5	7	1	21	36
Smallpox	0	0	0	0	0	0
Tetanus	0	0	0	0	0	1
Trachoma	0	0	0	0	0	1
Tuberculosis	93	76	80	83	651	774
Typhoid Fever	0	0	0	0	2	3
Typhoid Paratyphoid	0	0	0	0	0	0
Typhoid Carriers	0	0	0	0	0	2
Undulant Fever	1	0	1	2	6	26
Whooping Cough	41	27	46	36	295	208
Gonorrhoea	105	83	141	140	845	865
Syphilis	7	12	8	18	104	170
Tularemia	0	0	0	0	0	5

Four-Week Period August 12th to September 8th, 1951

***DEATHS FROM REPORTABLE DISEASES**

For the Month of September, 1951

DISEASE (White Cases Only)	*779,000 Manitoba	*861,000 Saskatchewan	*3,825,000 †Ontario	*2,952,000 Minnesota
Anterior Poliomyelitis	6	34	574	162
Chickenpox	40	46	288	—
Diarrhoea and Enteritis, under 1 yr.	13	12	—	—
Diphtheria	—	1	2	8
Diphtheria Carriers	—	—	—	—
Dysentery—Amoebic	—	1	—	4
Dysentery—Bacillary	3	—	4	62
Encephalitis Epidemica	—	3	—	—
Erysipelas	1	—	—	—
Influenza	2	—	9	1
Jaundice, Infectious	—	—	25	—
Measles	43	62	122	19
German Measles	4	41	78	—
Malaria Fever	—	—	—	5
Meningitis Meningococcal	3	4	4	5
Mumps	44	76	222	—
Ophthal. Neonat.	2	—	—	—
Pneumonia, Lobar	11	—	—	—
Puerperal Fever	1	—	—	—
Scarlet Fever	79	43	41	5
Septic Sore Throat	4	5	2	14
Smallpox	—	—	—	—
Tetanus	—	—	—	—
Trachoma	—	—	—	—
Tularemia	—	—	1	1
Tuberculosis	93	31	83	145
Typhoid Fever	—	—	1	—
Typh. Para-Typhoid	—	—	6	2
Typhoid Carrier	—	—	—	—
Undulant Fever	1	1	14	12
Whooping Cough	41	41	254	15
Gonorrhoea	105	—	207	—
Syphilis	7	—	54	—

*Approximate population

Urban — Cancer, 48; Pneumonia, Lobar (108, 107, 109), 4; Pneumonia (other forms), 5; Pneumonia of newborn, 1; Tuberculosis, 8. Other deaths under 1 year, 10. Other deaths over 1 year, 184; Stillbirths, 12. Total, 208.

Rural — Cancer, 33; Measles, 1; Pneumonia (other forms), 4; Pneumonia of newborn, 2; Tuberculosis, 5; Meningococcal infection, 1; Diarrhoea and Enteritis, 3. Other deaths under 1 year, 17. Other deaths over 1 year, 137. Stillbirths, 9. Total, 163.

Indians — Cancer, 1; Influenza, 1; Measles, 1; Pneumonia (other forms), 1; Tuberculosis, 2. Other deaths under 1 year, 1. Other deaths over 1 year, 2. Stillbirths, nil. Total, 3.

*As reported to date.

Poliomyelitis — To date of writing (October 15th) 28 cases have been reported and of these two have died. One or two others show marked paralysis, a few have moderate paralysis and about one-half the cases have no paralysis.

Chickenpox, Mumps and Measles are all showing signs of returning to normal incidence.

Scarlet Fever is still quite prevalent in many parts of the province but in most cases is mild.

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F. J. Burke	38 413
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W. J. McGurran	208 231
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B. S. Fleury	404 315

Schmid, Julius

E. E. Conway	64 274
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Shuttleworth, E. B.

S. M. Fairclough	30 158
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Will, Chas R.

John R. Hope	401 883
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Winthrop-Stearns

Geo. Edmonds	49 744
R. M. Kelly	34 580

Wyeth & Bro., John

A. W. Cumming	35 271
W. J. Tarbet	423 495

